10/084,406

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=> d his

     (FILE 'HOME' ENTERED AT 14:09:33 ON 30 JAN 2004)

     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 14:11:05 ON 30 JAN 2004
L1            10 S "C2GNT3"
L2             0 S ACETYLKGLYCOSAMINE
L3         36991 S ACETYLGLUCOSAMINE
L4             0 S "N-ACETYLGLUCVOSAMINETRANSFERASE?"
L5             4 DUP REM L1 (6 DUPLICATES REMOVED)
L6           257 S "C2GNT"
L7          5011 S "N-ACETYLGLUCOSAMINYLTRANSFERASE?"
L8          5065 S L6 OR L7
L9       6346882 S CLON? OR EXPRESS? OR RECOMBINANT
L10          233 S L6 AND L9
L11          146 S HUMAN AND L10
L12           43 DUP REM L11 (103 DUPLICATES REMOVED)
                E SCHWIENTEK T/AU
L13          116 S E3-E4
                E CLAUSEN H/AU
L14          804 S E3
L15          868 S L13 OR L14
L16            6 S L10 AND L15
L17            1 DUP REM L16 (5 DUPLICATES REMOVED)
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NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	SEP 09	CA/CAplus records now contain indexing from 1907 to the present
NEWS 4	DEC 08	INPADOC: Legal Status data reloaded
NEWS 5	SEP 29	DISSABS now available on STN
NEWS 6	OCT 10	PCTFULL: Two new display fields added
NEWS 7	OCT 21	BIOSIS file reloaded and enhanced
NEWS 8	OCT 28	BIOSIS file segment of TOXCENTER reloaded and enhanced
NEWS 9	NOV 24	MSDS-CCOHS file reloaded
NEWS 10	DEC 08	CABA reloaded with left truncation
NEWS 11	DEC 08	IMS file names changed
NEWS 12	DEC 09	Experimental property data collected by CAS now available in REGISTRY
NEWS 13	DEC 09	STN Entry Date available for display in REGISTRY and CA/CAplus
NEWS 14	DEC 17	DGENE: Two new display fields added
NEWS 15	DEC 18	BIOTECHNO no longer updated
NEWS 16	DEC 19	CROPU no longer updated; subscriber discount no longer available
NEWS 17	DEC 22	Additional INPI reactions and pre-1907 documents added to CAS databases
NEWS 18	DEC 22	IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields
NEWS 19	DEC 22	ABI-INFORM now available on STN
NEWS 20	JAN 27	Source of Registration (SR) information in REGISTRY updated and searchable
NEWS 21	JAN 27	A new search aid, the Company Name Thesaurus, available in CA/CAplus

NEWS EXPRESS	DECEMBER 28 CURRENT WINDOWS VERSION IS V7.00, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
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=> file medline embase biosis biotechds scisearch hcaplus ntis lifesci
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                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.63       0.63

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FILE 'LIFESCI' ENTERED AT 14:11:05 ON 30 JAN 2004
COPYRIGHT (C) 2004 Cambridge Scientific Abstracts (CSA)


=> s "c2GnT3"
L1          10 "C2GNT3"

=> s acetylkglycosamine
L2           0 ACETYLKGLYCOSAMINE

=> s acetylglucosamine
L3       36991 ACETYLGLUCOSAMINE

=> s "N-acetylglucvosaminetransferase?"
L4           0 "N-ACETYLGLUCVOSAMINETRANSFERASE?"

=> dup rem l1
PROCESSING COMPLETED FOR L1
L5           4 DUP REM L1 (6 DUPLICATES REMOVED)

=> d 1-4 ibib ab

L5   ANSWER 1 OF 4  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER:   2003:537205  BIOSIS
DOCUMENT NUMBER:    PREV200300537549
TITLE:              UDP-N-acetylglucosamine: galactose-beta1,
                    3-N-acetylgalactosamine-alpha-R/(GlcNAc to GalNAc)
                    beta1,6-N-acetylglucosaminyltransferase, C2GnT3.
AUTHOR(S):          Schwientek, Tilo [Inventor, Reprint Author]; Clausen,
                    Henrik [Inventor]
CORPORATE SOURCE:   Bronshoj, Denmark
                    ASSIGNEE: Glycozym Aps, Holte, Denmark
PATENT INFORMATION: US 6635461 October 21, 2003
```

SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Oct 21 2003) Vol. 1275, No. 3. http://www.uspto.gov/web/menu/patdata.html. e-file. ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Nov 2003
Last Updated on STN: 12 Nov 2003

AB A novel gene defining a novel human UDP-GlcNAc: Galbeta1-3 GalNAcalpha beta1,6GlcNAc-transferase, termed **C2GnT3**, with unique enzymatic properties is disclosed. The enzymatic activity of **C2GnT3** is shown to be distinct from that of previously identified enzymes of this gene family. The invention discloses isolated DNA molecules and DNA constructs encoding **C2GnT3** and derivatives thereof by way of amino acid deletion, substitution or insertion exhibiting **C2GnT3** activity, as well as cloning and expression vectors including such DNA, cells transfected with the vectors, and recombinant methods for providing **C2GnT3**. The enzyme **C2GnT3** and **C2GnT3**-active derivatives thereof are disclosed, in particular soluble derivatives comprising the catalytically active domain of **C2GnT3**. Further, the invention discloses methods of obtaining 1,6-N-acetylglucosaminyl glycosylated saccharides, glycopeptides or glycoproteins by use of an enzymically active **C2GnT3** protein or fusion protein thereof or by using cells stably transfected with a vector including DNA encoding an enzymatically active **C2GnT3** protein as an expression system for recombinant production of such glycopeptides or glycoproteins. Methods are disclosed for the identification of agents with the ability to inhibit or stimulate the biological activity of **C2GnT3**. Furthermore, methods of using **C2GnT3** in the structure-based design of inhibitors or stimulators thereof are also disclosed in the invention. Also a method for the identification of DNA sequence variations in the **C2GnT3** gene by isolating DNA from a patient, amplifying **C2GnT3**-coding exons by PCR, and detecting the presence of DNA sequence variation, are disclosed.

L5 ANSWER 2 OF 4 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2001-08448 BIOTECHDS
TITLE: New **C2GnT3** polypeptides and nucleic acids encoding the polypeptides useful for treating conditions mediated by a **C2GnT3** polypeptide, e.g. thymus-related disorders, cancers, tumors, immunosuppression; vector-mediated gene transfer, expression in bacterium, yeast, avian, mammal, CHO or Sf9 cell, DNA probe and antibody for recombinant protein production, drug screening and gene therapy
AUTHOR: Schwientek T; Clausen H
PATENT ASSIGNEE: Schwientek T; Clausen H
LOCATION: Bronshoj, Denmark; Holte, Denmark.
PATENT INFO: WO 2001014535 1 Mar 2001
APPLICATION INFO: WO 2000-DK469 24 Aug 2000
PRIORITY INFO: US 1999-150488 24 Aug 1999
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2001-226615 [23]

AB An isolated DNA (I, having specified 1,362 bp sequence) encoding a UDP-N-acetyl-glucosamine:galactose-beta-1,3-N-acetylgalactosamine-alpha-R-beta-1-6-N-acetylglucosaminyltransferase (**C2GnT3**), or its fragment, is claimed. Also claimed are: a DNA vector (II) containing a DNA sequence encoding **C2GnT3** or its fragments; a cell (III, e.g. bacterium, yeast, avian, mammal, CHO or Spodoptera frugiperda Sf9 cell) containing (II); producing **C2GnT3** proteins; screening one or more agents for the ability to inhibit or stimulate **C2GnT3** enzymatic activity in a cell-free or cell-based assay; identifying DNA sequence variations in the **C2GnT3** gene; a **C2GnT3**

protein (IV) having a specified 453 amino acid protein sequence; an antibody specific against an epitope; a DNA probe containing a sequence encoding (IV); diagnosing and monitoring conditions mediated by (IV); identifying a substance which associates with (IV); evaluating a compound which modulates (IV) activity; gene therapy directed at the thymus; and preparing an oligosaccharide. (I) or (IV) is useful in the preparation of compositions for treating conditions mediated by (IV), particularly a thymus-related disorder. (96pp)

L5 ANSWER 3 OF 4 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2000219156 MEDLINE
DOCUMENT NUMBER: 20219156 PubMed ID: 10753916
TITLE: Control of O-glycan branch formation. Molecular cloning and characterization of a novel thymus-associated core 2 beta1, 6-n-acetylglucosaminyltransferase.
AUTHOR: Schwientek T; Yeh J C; Levery S B; Keck B; Merkx G; van Kessel A G; Fukuda M; Clausen H
CORPORATE SOURCE: School of Dentistry, University of Copenhagen, Norre Alle 20, 2200 Copenhagen N, Denmark.. tsc@odont.ku.dk
CONTRACT NUMBER: 5 P41 RR05351 (NCRR)
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (2000 Apr 14) 275 (15) 11106-13.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF132035
ENTRY MONTH: 200005
ENTRY DATE: Entered STN: 20000518
Last Updated on STN: 20000518
Entered Medline: 20000505

AB Core 2 O-glycan branching catalyzed by UDP-N-acetyl-alpha-D-glucosamine: acceptor beta1, 6-N-acetylglucosaminyltransferases (beta6GlcNAc-Ts) is an important step in mucin-type biosynthesis. Core 2 complex-type O-glycans are involved in selectin-mediated adhesion events, and O-glycan branching appears to be highly regulated. Two homologous beta6GlcNAc-Ts functioning in O-glycan branching have previously been characterized, and here we report a third homologous beta6GlcNAc-T designated **C2GnT3**. **C2GnT3** was identified by BLAST analysis of human genome survey sequences. The catalytic activity of **C2GnT3** was evaluated by in vitro analysis of a secreted form of the protein expressed in insect cells. The results revealed exclusive core 2 beta6GlcNAc-T activity. The product formed with core 1-para-nitrophenyl was confirmed by (1)H NMR to be core 2-para-nitrophenyl. In vivo analysis of the function of **C2GnT3** by coexpression of leukosialin (CD43) and a full coding construct of **C2GnT3** in Chinese hamster ovary cells confirmed the core 2 activity and failed to reveal I activity. The **C2GnT3** gene was located to 5q12, and the coding region was contained in a single exon. Northern analysis revealed selectively high levels of a 5.5-kilobase **C2GnT3** transcript in thymus with only low levels in other organs. The unique expression pattern of **C2GnT3** suggests that this enzyme serves a specific function different from other members of the beta6GlcNAc-T gene family.

L5 ANSWER 4 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2001:93139 BIOSIS
DOCUMENT NUMBER: PREV200100093139
TITLE: Molecular cloning and characterization of a novel thymus associated core 2 beta1,6-N-acetylglucosaminyltransferase.
AUTHOR(S): Schwientek, Tilo [Reprint author]; Levery, Steven B.; Yeh, Jiunn-Chern; Keck, Birgit [Reprint author]; Merkx, Gerard; van Kessel, Ad Geurts; Fukuda, Minoru; Clausen, Henrik
CORPORATE SOURCE: School of Dentistry, University of Copenhagen, Norre Alle

```
                    20, 2200, Copenhagen N, Denmark
SOURCE:             Glycoconjugate Journal, (January-February, 2000) Vol. 17,
                    No. 1-2, pp. 49. print.
                    Meeting Info.: Second International Glycosyltransferase
                    Symposium. Toronto, Ontario, Canada. May 12-14, 2000.
                    ISSN: 0282-0080.
DOCUMENT TYPE:      Conference; (Meeting)
                    Conference; Abstract; (Meeting Abstract)
LANGUAGE:           English
ENTRY DATE:         Entered STN: 21 Feb 2001
                    Last Updated on STN: 12 Feb 2002


=> s "c2GnT"
L6          257 "C2GNT"

=> d his

     (FILE 'HOME' ENTERED AT 14:09:33 ON 30 JAN 2004)

     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 14:11:05 ON 30 JAN 2004
L1            10 S "C2GNT3"
L2             0 S ACETYLKGLYCOSAMINE
L3         36991 S ACETYLGLUCOSAMINE
L4             0 S "N-ACETYLGLUCVOSAMINETRANSFERASE?"
L5             4 DUP REM L1 (6 DUPLICATES REMOVED)
L6           257 S "C2GNT"

=> s "N-acetylglucosaminyltransferase?"
L7          5011 "N-ACETYLGLUCOSAMINYLTRANSFERASE?"

=> s l6 or l7
L8          5065 L6 OR L7

=> s clon? or express? or recombinant
   5 FILES SEARCHED...
L9       6346882 CLON? OR EXPRESS? OR RECOMBINANT

=> s l6 and l9
L10          233 L6 AND L9

=> s human and l10
L11          146 HUMAN AND L10

=> dup rem l11
PROCESSING COMPLETED FOR L11
L12           43 DUP REM L11 (103 DUPLICATES REMOVED)

=> d 1-43 ibib ab

L12  ANSWER 1 OF 43  SCISEARCH  COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER:    2003:1003351  SCISEARCH
THE GENUINE ARTICLE: 741HH
TITLE:               Highly conserved cysteines of mouse core 2 beta
                     1,6-N-acetylglucosaminyltransferase I form a network of
                     disulfide bonds and include a thiol that affects enzyme
                     activity
AUTHOR:              Yen T Y; Macher B A; Bryson S; Chang X Q; Tvaroska I; Tse
                     R; Takeshita S; Lew A M; Datti A (Reprint)
CORPORATE SOURCE:    GlycoDesign Inc, 480 Univ Ave, Ste 400, Toronto, ON M5G
                     1V2, Canada (Reprint); GlycoDesign Inc, Toronto, ON M5G
                     1V2, Canada; San Francisco State Univ, Dept Chem &
                     Biochem, San Francisco, CA 94132 USA; Seikagaku Corp, Cent
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Res Labs, Tokyo 2070021, Japan
COUNTRY OF AUTHOR: Canada; USA; Japan
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (14 NOV 2003) Vol. 278, No. 46, pp. 45864-45881.
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3996 USA.
ISSN: 0021-9258.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 68

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Core 2 beta1,6-N-acetylglucosaminyltransferase I (**C2GnT**-I) plays a pivotal role in the biosynthesis of mucin-type O-glycans that serve as ligands in cell adhesion. To elucidate the three-dimensional structure of the enzyme for use in computer-aided design of therapeutically relevant enzyme inhibitors, we investigated the participation of cysteine residues in disulfide linkages in a purified murine **recombinant** enzyme. The pattern of free and disulfide-bonded Cys residues was determined by liquid chromatography/electrospray ionization tandem mass spectrometry in the absence and presence of dithiothreitol. Of nine highly conserved Cys residues, under both conditions, one (Cys(217)) is a free thiol, and eight are engaged in disulfide bonds, with pairs formed between Cys(59)-Cys(413), Cys(100)-Cys(172), Cys(151)-Cys(199), and Cys(372)-Cys(381). The only non-conserved residue within the beta1,6-N-acetylglucosaminyltransferase family, Cys(235), is also a free thiol in the presence of dithiothreitol; however, in the absence of reductant, Cys(235) forms an intermolecular disulfide linkage. Biochemical studies performed with thiol-reactive agents demonstrated that at least one free cysteine affects enzyme activity and is proximal to the UDP-GlcNAc binding site. A Cys(217)-->Ser mutant enzyme was insensitive to thiol reactants and displayed kinetic properties virtually identical to those of the wild-type enzyme, thereby showing that Cys(217), although not required for activity per se, represents the only thiol that causes enzyme inactivation when modified. Based on the pattern of free and disulfide-linked Cys residues, and a method of fold recognition/threading and homology modeling, we have computed a three-dimensional model for this enzyme that was refined using the T4 bacteriophage beta-glucosyltransferase fold.

L12 ANSWER 2 OF 43 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2004:5496 BIOSIS
DOCUMENT NUMBER: PREV200400006400
TITLE: Core 2 fA-1,6-N-acetylglucosaminyltransferase (**C2GnT**) **expression** in **human** prostate cancer: A predictor for non-organ confined disease and biochemical relapse after radical prostatectomy.
AUTHOR(S): Ohyama, Chikara [Reprint Author]; Hagisawa, Shigeru; Hatakeyama, Shingo [Reprint Author]; Arai, Yoichi; Fukuda, Minoru
CORPORATE SOURCE: Department of Urology, Akita University School of Medicine, Akita, Japan
SOURCE: Glycobiology, (November 2003) Vol. 13, No. 11, pp. 864. print.
Meeting Info.: 8th Annual Conference of the Society for Glycobiology. San Diego, California, USA. December 03-06, 2003. Society for Glycobiology.
ISSN: 0959-6658.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 17 Dec 2003
Last Updated on STN: 17 Dec 2003

L12 ANSWER 3 OF 43 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2003:1076263 SCISEARCH
THE GENUINE ARTICLE: 735WU
TITLE: Core 2 fA-1,6-N-acetylglucosaminyltransferase (**C2GnT**) **expression** in **human** prostate cancer: A predictor for non-organ confined disease and biochemical relapse after radical prostatectomy
AUTHOR: Ohyama C (Reprint); Hagisawa S; Hatakeyama S; Arai Y I; Fukuda M
CORPORATE SOURCE: Akita Univ, Sch Med, Dept Urol, Akita 010, Japan; Tohoku Univ, Sch Med, Dept Urol, Sendai, Miyagi 980, Japan; Burnham Inst, Glycobiol program, La Jolla, CA 92037 USA
COUNTRY OF AUTHOR: Japan; USA
SOURCE: GLYCOBIOLOGY, (NOV 2003) Vol. 13, No. 11, pp. 864-864. MA 143.
Publisher: OXFORD UNIV PRESS INC, JOURNALS DEPT, 2001 EVANS RD, CARY, NC 27513 USA.
ISSN: 0959-6658.
DOCUMENT TYPE: Conference; Journal
LANGUAGE: English
REFERENCE COUNT: 0

L12 ANSWER 4 OF 43 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003248675 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12626388
TITLE: Multiple transcription initiation and alternative splicing in the 5' untranslated region of the core 2 beta1-6 N-acetylglucosaminyltransferase I gene.
AUTHOR: Falkenberg V Rebecca; Alvarez Karen; Roman Clara; Fregien Nevis
CORPORATE SOURCE: Department of Cell Biology and Anatomy, University of Miami School of Medicine, Miami, FL 33176, USA.
SOURCE: Glycobiology, (2003 Jun) 13 (6) 411-8.
Journal code: 9104124. ISSN: 0959-6658.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200401
ENTRY DATE: Entered STN: 20030530
Last Updated on STN: 20040106
Entered Medline: 20040105

AB The glycosyltransferase core 2 beta1,6 N-acetylglucosaminyltransferase I (**C2GnT** I) plays an important regulatory role in the synthesis of biologically significant oligosaccharide structures. This gene is **expressed** in a variety of cell types, including lymphocytes and mucin-producing cells. The **expression** pattern of this gene suggests a complex system of regulation. To investigate the molecular regulation of this gene and locate potential promoter elements, rapid amplification of cDNA ends (RACE) analysis was used to determine the 5' ends of the **C2GnT** I mRNAs from a number of tissues. These experiments identified five **C2GnT** I mRNAs that are different in their 5' untranslated regions. The RACE cDNAs had four different 5' terminal sequences (exons A, B, D, and E'), suggesting four transcription initiation sites. One mRNA form was the result of alternative exon (exon C) utilization. These exons are spread across 60 kb of DNA on **human** chromosome 9, and all splice to the exon (exon F) that contains the **C2GnT** I coding region. Reverse transcription polymerase chain reaction experiments using primers specific for each of the four 5' end exon sequences revealed that the 5' terminal exons are differentially **expressed**, suggesting tissue specificity for the different 5' untranslated regions. These findings are consistent with the presence of multiple tissue-specific promoters for the **C2GnT** I

gene.

L12 ANSWER 5 OF 43 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2003227343 IN-PROCESS
DOCUMENT NUMBER: PubMed ID: 12626393
TITLE: Purification and cDNA **cloning** of UDP-GlcNAc:GlcNAcbeta1-3Galbeta1-4Glc(NAc)-R [GlcNAc to Gal]beta1,6N-acetylglucosaminyltransferase from rat small intestine: a major carrier of dIGnT activity in rat small intestine.
AUTHOR: Korekane Hiroaki; Taguchi Tomohiko; Sakamoto Yoshihiro; Honke Koichi; Dohmae Naoshi; Salminen Heidi; Toivonen Suvi; Helin Jari; Takio Koji; Renkonen Ossi; Taniguchi Naoyuki
CORPORATE SOURCE: Department of Biochemistry, Osaka University Medical School/graduate School of Medicine, 2-2 Yamadaoka, Suita, Osaka 565-0871, Japan.
SOURCE: Glycobiology, (2003 May) 13 (5) 387-400.
Journal code: 9104124. ISSN: 0959-6658.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: IN-PROCESS; NONINDEXED; Priority Journals
OTHER SOURCE: GENBANK-AB098520
ENTRY DATE: Entered STN: 20030517
Last Updated on STN: 20031217

AB A rat intestinal beta1,6N-acetylglucosaminyltransferase (beta1-6GnT) responsible for the formation of the beta1,6-branched poly-N-acetyllactosamine structure has been purified to apparent homogeneity by successive column chromatographic procedures using an assay wherein pyridylaminated lacto- N-triose II (GlcNAcbeta1-3Galbeta1-4Glc-PA) was used as an acceptor substrate and the reaction product was GlcNAcbeta1-3(GlcNAcbeta1-6)Galbeta1-4Glc-PA. The purified enzyme catalyzed the conversion of the polylactosamine acceptor GlcNAcbeta1-3'LacNAc into GlcNAcbeta1-3'(GlcNAcbeta1-6') LacNAc (dIGnT activity), but it could not transfer GlcNAc to LacNAcbeta1-3'LacNAc (cIGnT activity). This enzyme could also convert mucin core 1 and core 3 analogs, Galbeta1-3GalNAcalpha1-O-paranitrophenyl (pNP) and GlcNAcbeta1-3GalNAcalpha1-O-pNP, into Galbeta1-3(GlcNAcbeta1-6) GalNAcalpha1-O-pNP (**C2GnT** activity) and GlcNAcbeta1-3(GlcNAcbeta1-6)GalNAcalpha1-O-pNP (C4GnT activity), respectively. Based on the partial amino acid sequences of the purified protein, the cDNA encoding this enzyme was **cloned**. The COS-1 cells transiently transfected with this cDNA had high dI/C2/C4GnT activities in a ratio of 0.34:1.00:0.90, compared with non- or mock-transfected cells. The primary structure shows a significant homology with **human** and viral mucin-type core 2 beta1-6GnTs (**C2GnT**-Ms), indicating that this enzyme is the rat ortholog of **human** and viral **C2GnT** -Ms. This is the first identification and purification of this enzyme as a major carrier of dIGnT activity in the small intestine. This rat ortholog should mostly be responsible for making distal I-branch structures on poly-N-acetyllactosamine sequences in this tissue, as well as making mucin core 2 and core 4 structures, given that it also has high C2/C4GnT activities.

L12 ANSWER 6 OF 43 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2003293624 MEDLINE
DOCUMENT NUMBER: 22705153 PubMed ID: 12600830
TITLE: Mucin biosynthesis: epidermal growth factor downregulates core 2 enzymes in a **human** airway adenocarcinoma cell line.
AUTHOR: Beum Paul V; Bastola Dhundy R; Cheng Pi-Wan
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Nebraska Medical Center, Omaha, Nebraska 68198-4525, USA.

CONTRACT NUMBER: R01 HL48282 (NHLBI)
SOURCE: AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY, (2003 Jul) 29 (1) 48-56.
Journal code: 8917225. ISSN: 1044-1549.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200308
ENTRY DATE: Entered STN: 20030625
Last Updated on STN: 20030806
Entered Medline: 20030805

AB Enzymes which exhibit core 2 beta1,6 N-acetylglucosaminyltransferase (**C2GnT**) activity play important roles in physiologic processes including the inflammatory response and immune system function, and **C2GnT** activity is regulated during processes, such as T cell activation and cellular differentiation. In this study, we have examined the regulation of **C2GnT** activity in the H292 airway epithelial cell line by epidermal growth factor (EGF), which has been previously shown to upregulate **expression** of the airway mucin MUC5AC in this cell line. We found that EGF suppressed **C2GnT** activity in a time- and dose-dependent fashion, and also suppressed core 4 beta1,6 N-acetylglucosaminyltransferase (C4GnT) activity. Consistent with the suppression of C4GnT activity, Northern blotting results showed that EGF preferentially inhibited the M isoform of **C2GnT**, which forms core 2, core 4, and blood group I beta1,6 branched carbohydrate structures, while the L isoform, which forms only the core 2 structure, was only modestly affected. Furthermore, EGF treatment resulted in a shift in the carbohydrate structure of FLAG-tagged MUC1 **expressed** in the cells from core 2-based toward core 1-based structures, consistent with the inhibitory effects of EGF on **C2GnT**. Transforming growth factor alpha mimicked the effect of EGF on **C2GnT**, implicating the EGF receptor (EGF-R) in **C2GnT** suppression, and the EGF-R tyrosine kinase inhibitor AG1478 blocked **C2GnT** suppression, confirming the role of EGF-R in the inhibition of **C2GnT expression**. Also, PD98059, a specific inhibitor of mitogen-activated protein kinase/extracellular signal-regulated kinase kinase (MEK)1/2 in the Ras-mitogen-activated protein kinase pathway, completely blocked the EGF suppressive effect, suggesting possible involvement of the Ras-mitogen-activated protein kinase pathway in EGF-mediated downregulation of **C2GnT**. The results of this study suggest that exposure of airway cells to EGF may result in remodeling of mucin carbohydrate structure, potentially altering the biological properties of the cells.

L12 ANSWER 7 OF 43 NTIS COPYRIGHT 2004 NTIS on STN
ACCESSION NUMBER: 2003(19):00303
NTIS ORDER NUMBER: ADA413351/XAB
TITLE: Elucidation of a Novel Cell Death Mechanism in Prostate Epithelial Cells. Annual rept. 19 Nov 2001-18 Nov 2002.
AUTHOR: Baum, L. G.
CORPORATE SOURCE: California Univ., Los Angeles. (005420000 072250)
NUMBER OF REPORT: ADA413351/XAB
21p; Dec 2002
NUMBER OF CONTRACT: DAMD17-02-1-0022
CONTROLLED TERM: Report
COUNTRY: United States
LANGUAGE: English
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located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A03/MF A01

OTHER SOURCE: GRA&I0319

AB Tumor cell resistance to apoptosis is a major obstacle to effective therapy of prostate cancer. We have found that the androgen dependent prostate cancer cell line LNCaP is sensitive to apoptosis induced by galectin-1, an endogenous **human** lectin that is abundant in prostate stroma. In contrast, androgen independent LNCaP, DU145 and PC3 cells are resistant to galectin-1 induced death and actually synthesize galectin-1 and export it to the cell surface. Galectin-1 binds to saccharide ligands on susceptible LNCaP cells to trigger cell death. Susceptibility to galectin-1 appears to depend on the presence of a specific class of cell surface glycans, the O-linked glycans on glycoproteins; in contrast, N-glycans are not required for galectin-1 induced LNCaP cell death. Resistance to galectin-1 induced death correlates with markedly decreased **expression** of a specific glycosyltransferase, the **C2GnT**, which creates saccharide ligands on O-glycans that are recognized by galectin-1. The **C2GnT** enzyme also regulates susceptibility of T cells to galectin-1 induced death, indicating that a common glycosylation pathway may control cell death in epithelial and lymphoid cells. Identification of a mechanism that enhances galectin-1 prostate cancer cell death may allow novel therapeutic approaches to manipulate tumor cell glycosylation to overcome tumor cell resistance to apoptosis.

L12 ANSWER 8 OF 43 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2002696058 MEDLINE
DOCUMENT NUMBER: 22344688 PubMed ID: 12359718
TITLE: The alpha (1,3)-fucosyltransferase Fuc-TIV, but not Fuc-TVII, generates sialyl Lewis X-like epitopes preferentially on glycolipids.
AUTHOR: Huang Min-Chuan; Laskowska Anna; Vestweber Dietmar; Wild Martin K
CORPORATE SOURCE: Institute of Cell Biology, Center for Molecular Biology of Inflammation, University of Munster and the Max-Planck-Institute of Vascular Biology, D-48149 Munster, Germany.
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (2002 Dec 6) 277 (49) 47786-95.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200302
ENTRY DATE: Entered STN: 20021217
Last Updated on STN: 20030205
Entered Medline: 20030204

AB Fuc-TIV and Fuc-TVII are the two alpha(1, 3)-fucosyltransferases in myeloid cells responsible for the biosynthesis of sialyl Lewis X (sLe(x)), the minimal ligand structure for the selectins. We have compared the ability of Fuc-TIV and Fuc-TVII to generate sLe(x)-like epitopes in transfected Chinese hamster ovary (CHO)-Pro(-)5 cells **expressing** the P-selectin glycoprotein ligand-1 and the core-2 branching enzyme **C2GnT**. We found that mouse Fuc-TIV and Fuc-TVII can generate similar levels of cell surface sLe(x). Surprisingly however, Fuc-TIV-generated sLe(x) was resistant to proteinase K and trypsin treatment and could be removed from cells by delipidation with chloroform/methanol, whereas 80-90% of Fuc-TVII-generated sLe(x) was protease-sensitive, and most of it resistant to delipidation. Despite similar levels of sLe(x) on the cell surface, Fuc-TVII transfectants adhered to immobilized E-selectin-IgG under static and flow conditions better than Fuc-TIV transfectants. Binding was mainly protease sensitive,

indicating that glycoproteins were more efficient ligands than glycolipids. In summary, we conclude that the two fucosyltransferases differ in their in vivo specificity for acceptor substrates with Fuc-TVII generating sLe(x) preferentially on glycoproteins, whereas most of the Fuc-TIV-generated sLe(x) is found on glycolipids. Interestingly, the non-catalytic portion of Fuc-TIV in a Fuc-TIV/VII chimeric enzyme mediated the specificity for glycolipid substrates.

L12 ANSWER 9 OF 43 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 2002299855 MEDLINE
DOCUMENT NUMBER: 22005981 PubMed ID: 12010808
TITLE: The monoclonal antibody CHO-131 binds to a core 2 O-glycan terminated with sialyl-Lewis x, which is a functional glycan ligand for P-selectin.
AUTHOR: Walcheck Bruce; Leppanen Anne; Cummings Richard D; Knibbs Randall N; Stoolman Lloyd M; Alexander Shelia R; Mattila Polly E; McEver Rodger P
CORPORATE SOURCE: Department of Veterinary PathoBiology, University Minnesota Academic Health Center, University of Minnesota, St Paul 55108, USA.. walch003@umn.edu
CONTRACT NUMBER: AI 48075 (NIAID)
HL 65631 (NHLBI)
SOURCE: BLOOD, (2002 Jun 1) 99 (11) 4063-9.
Journal code: 7603509. ISSN: 0006-4971.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200207
ENTRY DATE: Entered STN: 20020604
Last Updated on STN: 20020702
Entered Medline: 20020701

AB Core 2 O-glycans terminated with sialyl-Lewis x (sLe(X)) are functionally important oligosaccharides that endow particular macromolecules with high-affinity glycan ligands for the selectin family. To date, antibodies that recognize these structures on leukocytes have not been described. We characterize such a monoclonal antibody (mAb) here (CHO-131). The binding specificity of CHO-131 was directly examined by means of synthetic glycopeptides containing precise O-glycan structures. CHO-131 bound to sLe(X) extended from a core 2 branch (C2-O-sLe(X)), but CHO-131 demonstrated no reactivity if this oligosaccharide lacked fucose or if sLe(X) was extended from a core 1 branch. Using transfected cell lines, we found that CHO-131 binding required the functional activity of the glycosyltransferases alpha2,3-sialyltransferase, alpha1,3-fucosyltransferase-VII, and core 2 beta1,6 N-acetylglucosaminyltransferase (**C2GnT**). The C2-O-sLe(X) motif occurs primarily on sialomucins and has been directly shown to contribute to high-affinity P-selectin glycoprotein ligand-1 binding by P-selectin. Indeed, CHO-131 staining of neutrophils was diminished following sialomucin removal by O-glycoprotease, and its reactivity with transfected hematopoietic cell lines correlated with the **expression** of P-selectin ligands. CHO-131 also stained a small population of lymphocytes that were primarily CD3(+), CD4(+), and CD45RO(+) and represented a subset (37.8% +/- 18.3%) of cutaneous lymphocyte-associated antigen (CLA) T cells, distinguished by the mAb HECA-452, which detects sLe(X)-related glycans. Unlike anti-sLe(X) mAbs, CHO-131 binding also indicates **C2GnT** activity and demonstrates that CLA T cells are heterogeneous based on the glycan structures they synthesize. These findings support evidence that differential **C2GnT** activity results in T-cell subsets that **express** ligands for E-selectin, P-selectin, or both.

L12 ANSWER 10 OF 43 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 2002450937 MEDLINE
DOCUMENT NUMBER: 22197242 PubMed ID: 12209829

TITLE: Engineering of coordinated up- and down-regulation of two glycosyltransferases of the O-glycosylation pathway in Chinese hamster ovary (CHO) cells.
AUTHOR: Prati Elisabetta G P; Matasci Mattia; Suter Tobias B; Dinter Andre; Sburlati Adriana R; Bailey James E
CORPORATE SOURCE: Institute of Biotechnology, ETH Zurich, Switzerland.. prati@biotech.biol.ethz.ch
SOURCE: BIOTECHNOLOGY AND BIOENGINEERING, (2002 Sep 5) 79 (5) 580-5.
Journal code: 7502021. ISSN: 0006-3592.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200303
ENTRY DATE: Entered STN: 20020906
Last Updated on STN: 20030320
Entered Medline: 20030319

AB Production of O-linked oligosaccharides that interact with selectins to mediate cell-cell adhesion occurs in one segment of a branched glycan biosynthesis network. Prior efforts to direct the branched pathway towards selectin-binding oligosaccharides by amplifying enzymes in this branch of the network have had limited success, suggesting that metabolic engineering to simultaneously inhibit the competing pathway may also be required.We report here the partial **cloning** of the CMP-sialic, acid:Galbeta1,3GalNAcalpha2,3-sialyltransferase (ST3Gal I) gene from Chinese hamster ovary (CHO) cells and the simultaneous inhibition of **expression** of CHO cell ST3Gal I gene and overexpression of the **human** UDP-GlcNAc:Galbeta1,3GalNAc-R beta1,6-N-acetylglucosaminyltransferase (**C2GnT**) gene. A tetracycline-regulated system adjoined to tricistronic **expression** technology allowed "one-step" transient manipulation of multiple enzyme activities in the O-glycosylation pathway of a previously established CHO cell line already engineered to **express** alpha1,3-fucosyltransferase VI (alpha1,3-Fuc-TVI). Tetracycline-regulated co-**expression** of a ST3Gal I fragment, **cloned** in the antisense orientation, and of **C2GnT** cDNA resulted in inhibition of the ST3Gal I enzymatic activity and increase in **C2GnT** activity which varied depending on the extent of tetracycline reduction in the cell culture medium. This simultaneous regulated inhibition and activation of the two key enzyme activities in the O-glycosylation pathway of mammalian cells is an important addition to the metabolic engineering field.

L12 ANSWER 11 OF 43 MEDLINE on STN
ACCESSION NUMBER: 2003138543 MEDLINE
DOCUMENT NUMBER: 22540114 PubMed ID: 12652802
TITLE: Glycosyltransferase genes as tumor marker.
AUTHOR: Nakayama Jun; Shimizu Fumiaki; Katsuyama Tsutomu
CORPORATE SOURCE: Department of Pathology, Shinshu University School of Medicine.
SOURCE: RINSHO BYORI. JAPANESE JOURNAL OF CLINICAL PATHOLOGY, (2002 Nov) Suppl 123 142-8. Ref: 15
Journal code: 2984781R. ISSN: 0047-1860.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: Japanese
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 20030326
Last Updated on STN: 20030521

Entered Medline: 20030520

AB Core 2 beta 1,6-N-acetylglucosaminyltransferase(**C2GnT**) and alpha 1,4-N-acetylglucosaminyltransferase are glycosyltransferases involved in the biosynthesis of mucin type glycoprotein(O-glycan). The transcripts of **C2GnT**, which forms core 2-branched O-glycan(Gal beta 1-->3 (GlcNAc beta 1-->6)GalNAc alpha-->Ser/Thr), were detected approximately in 2/3 cases of patients with colorectal or lung cancers. Then, carcinoma cells **expressing C2GnT** mRNA were shown to significantly progress compared with those lacking the **C2GnT** mRNA, indicating an important role of the core 2-branched O-glycan in tumor progression. On the other hand, gland mucous cell-type mucin secreted from the normal gastric mucosa characteristically contains GlcNAc alpha 1-->4Gal beta-->R structure, and the alpha 4GnT is critical for the biosynthesis of this unique glycan. This enzyme is also detected in gastric cancer cells but not in mononuclear cell fraction of the peripheral blood. Thus, the quantitative RT-PCR method targeted to alpha 4GnT mRNA will be useful for the detection of circulating gastric cancer cells in the peripheral blood.

L12 ANSWER 12 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:431030 HCAPLUS

DOCUMENT NUMBER: 135:165285

TITLE: Overexpression of sialyltransferase CMP-sialic acid:Gal.beta.1,3GalNAc-R .alpha.6-sialyltransferase is related to poor patient survival in **human** colorectal carcinomas

AUTHOR(S): Schneider, Frank; Kemmner, Wolfgang; Haensch, Wolfgang; Franke, Gudrun; Gretschel, Stephan; Karsten, Uwe; Schlag, Peter Michael

CORPORATE SOURCE: Department for Surgery and Surgical Oncology, Robert-Rossle-Klinik at the Max Delbruck Center for Molecular Medicine, Charite, Berlin, D-13122, Germany

SOURCE: Cancer Research (2001), 61(11), 4605-4611
CODEN: CNREA8; ISSN: 0008-5472

PUBLISHER: American Association for Cancer Research

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thomsen-Friedenreich (TF)-related blood group antigens, such as TF, Tn, and their sialylated variants, belong to a family of tumor-assocd. carbohydrates. The aim of the present study was to examine tumor-assocd. alterations of glycosyltransferases involved in the biosynthesis of the TF glycotope in colorectal carcinomas. To this end, glycosyltransferase **expression** was examd. in 40 cases of colorectal carcinoma specimens classified according to the WHO/Union International Contre Cancer guidelines and in "normal" mucosa of the same patients. Occurrence of TF glycotope was examd. by immunohistochem. with the monoclonal antibody A78-G/A7. **Expression** of sialyltransferases CMP-sialic acid:Gal.beta.1,3GalNAc-R .alpha.3-sialyltransferase I and II (ST3Gal-I and ST3Gal-II) and CMP-sialic acid:Gal.beta.1,3GalNAc-R .alpha.6-sialyltransferase (ST6GalNAc-II) and of core 2 .beta.1,6-N-acetylglucosaminyltransferase was detd. by reverse transcription-PCR in the same cryostat sections used for immunohistochem. Addnl., .alpha.2,3-sialyltransferase enzyme activity was studied in each of these tissues. The TF glycotope was detected in 7% of the normal mucosa, but in 57% of the carcinoma samples. **Expression** of .alpha.2,3-sialyltransferases ST3Gal-I, ST3Gal-II, and enzyme activity of .alpha.2,3-sialyltransferase was significantly increased ($P < 0.001$) in carcinoma specimens compared with normal mucosa. ST3Gal-I mRNA **expression** was significantly increased ($P = 0.05$) in cases showing invasion of lymph vessels. **Expression** of ST6GalNAc-II was significantly increased ($P = 0.04$) in cases with metastases to lymph nodes along the vascular trunk. Moreover, ST6GalNAc-II **expression** provides an prognostic factor for patient survival (log rank, $P = 0.02$). In an attempt to study the functional relevance of the glycosyltransferases for TF biosynthesis, SW480 colorectal cells were

transfected with each of the enzymes, and cell surface **expression** of the TF glycotope was examd. by flow cytometry. The presence of TF was not altered by transfection of the cells with either sialyltransferase ST3Gal-I or ST3Gal-II. However, successful transfection with core 2 .beta.1,6-N-acetylglucosaminyltransferase led to reduced **expression** of TF. In contrast, increased cell surface **expression** of TF was found after ST6GalNAc-II transfection. Thus, **expression** of TF on the cell surface of SW480 colorectal carcinoma cells depends on the ratio of core 2 .beta.1,6-N-acetylglucosaminyltransferase and ST6GalNAc-II. Earlier immunohistol. studies demonstrated that TF is a prognostic factor for patient survival. Our results suggest that sialyltransferase ST6GalNAc-II is of crucial relevance for the prognostic significance of TF.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 13 OF 43 MEDLINE on STN DUPLICATE 7

ACCESSION NUMBER: 2001189694 MEDLINE
DOCUMENT NUMBER: 21175004 PubMed ID: 11280791
TITLE: Clinicopathological significance of core 2 beta1,6-N-acetylglucosaminyltransferase messenger RNA **expressed** in the pulmonary adenocarcinoma determined by in situ hybridization.
AUTHOR: Machida E; Nakayama J; Amano J; Fukuda M
CORPORATE SOURCE: Second Department of Surgery, Shinshu University School of Medicine, Matsumoto, Japan.
CONTRACT NUMBER: CA33000 (NCI)
CA48737 (NCI)
SOURCE: CANCER RESEARCH, (2001 Mar 1) 61 (5) 2226-31.
Journal code: 2984705R. ISSN: 0008-5472.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200104
ENTRY DATE: Entered STN: 20010425
Last Updated on STN: 20010425
Entered Medline: 20010419

AB Cell surface carbohydrates of epithelial cells play important roles in tumor progression. Previously, we have shown that **expression** of core 2 branched O-glycans in colorectal cancer is closely correlated with the vessel invasion and depth of invasion (K. Shimodaira et al., Cancer Res., 57: 5201-5206, 1997). To test whether this is also the case in **human** lung cancer, we have examined the **expression** pattern of core 2 beta1,6-N-acetylglucosaminyltransferase (**C2GnT**) mRNA responsible for the biosynthesis of core 2 branched O-glycans in 41 cases of lung cancer. Using in situ hybridization, **C2GnT** mRNA was detected in 73.2% of the lung cancer cells, irrespective of the histopathological type; whereas in normal lung tissues, its **expression** was restricted to the basal cells of bronchial mucosa. These results indicate that the **expression** level of **C2GnT** mRNA was significantly enhanced in association with malignant transformation. Statistical analysis between the **C2GnT** mRNA **expressed** in pulmonary adenocarcinoma and clinicopathological variables revealed that the **expression** of **C2GnT** was correlated with vessel invasion and lymph node metastasis with significant difference ($P < 0.05$), but **expression** of sialyl Le(x), which is frequently **expressed** in the adenocarcinoma, was not significantly correlated with lymph node metastasis. These results indicate that **C2GnT** mRNA detected by in situ hybridization reflects the malignant potentials of pulmonary adenocarcinoma, because lymph node metastasis is the most affecting factor to the patients' prognosis.

L12 ANSWER 14 OF 43 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:220540 BIOSIS
DOCUMENT NUMBER: PREV200200220540
TITLE: The VNTR polymorphism of **human** P-selectin glycoprotein ligand 1 (PSGL-1) affects the kinetics of the PSGL-1-P-selectin bond and the rolling velocity of PSGL-1-**expressing** cells in a flow field.
AUTHOR(S): Afshar-Kharghan, Vahid [Reprint author]; Padilla, Arnoldo [Reprint author]; Romo, Gabriel [Reprint author]; Li, Chester Q. [Reprint author]; Lopez, Jose A. [Reprint author]
CORPORATE SOURCE: Thrombosis Research Section, Baylor College of Medicine, Houston, TX, USA
SOURCE: Blood, (November 16, 2001) Vol. 98, No. 11 Part 1, pp. 699a. print.
Meeting Info.: 43rd Annual Meeting of the American Society of Hematology, Part 1. Orlando, Florida, USA. December 07-11, 2001. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Apr 2002
Last Updated on STN: 3 Apr 2002

AB Leukocyte adhesion to the vessel wall is an important first step in inflammation. To exit the blood stream, leukocytes first attach and roll on surfaces of activated endothelium or activated platelets. These surfaces bear P-selectin, exposed there from internal granule stores, which mediates leukocyte attachment by interacting with its leukocyte counter-receptor, P-selectin glycoprotein ligand-1 (PSGL-1). PSGL-1 is a disulfide-linked homodimer of an elongated mucin-like transmembrane polypeptide that requires posttranslational tyrosine sulfation and carbohydrate core-2 branching and alpha1,3 fucosylation to bind P-selectin. We have recently identified three allelic variants of PSGL-1 due to variable numbers of tandem repeats (VNTR) of a 10-amino acid sequence within the mucin-like core of the molecule. From largest to smallest, the 3 variants are designated A, B, and C, with 16, 15, and 14 repeats, respectively. Of the 16 repeats in variant A, B lacks repeat 2 and C lacks repeats 9 and 10. This polymorphism is expected to affect the length of the polypeptide, and to change the spatial relationship between individual polypeptides in the PSGL-1 dimer if two different variants are coexpressed. To study the role of the VNTR polymorphism in PSGL-1 function, we created Chinese hamster ovary (CHO) cell lines **expressing** the individual variants, alone and in combinations of two, together with the necessary carbohydrate modifying enzymes, fucosyltransferase VII (FTVII) and the core-2 branching enzyme (**C2GnT**). We verified by flow cytometry that the individual cell lines **express** equivalent quantities of surface PSGL-1. We compared cell lines **expressing** the two forms with the greatest size discrepancy, A and C, for their ability to adhere to and roll on surface-immobilized P-selectin in a parallel-plate flow chamber system, at 2 and 10 dynes/cm2. CHO cells **expressing** only FTVII and **C2GnT** served as negative controls. At 2 dynes/cm2, the three PSGL-1-**expressing** cell lines (CHO AA, CHO CC, and CHO AC) all attached to the P-selectin matrix, with CHO CC rolling 20% faster than CHO AA and 70% faster than CHO AC ($p=0.07$ and $p=0.0002$, respectively). At 10 dynes/cm2, CHO CC cells completely failed to attach and roll on the matrix, and CHO AA cells rolled on average 40% faster than CHO AC cells ($p=0.004$). Thus, the shortest PSGL-1 variant supported cell adhesion more poorly than the longest variant or a combination of the longest and shortest variants, which was the most efficient in mediating adhesion. These data provide evidence that the PSGL-1 VNTR polymorphism may be a significant determinant of leukocyte adhesion in vivo, and thus may also

be a marker for risk of inflammatory disease.

L12 ANSWER 15 OF 43 MEDLINE on STN DUPLICATE 8
ACCESSION NUMBER: 2001503438 MEDLINE
DOCUMENT NUMBER: 21437016 PubMed ID: 11552947
TITLE: Core 2 beta1,6-N-acetylglucosaminyltransferases and alpha1,3-fucosyltransferases regulate the synthesis of O-glycans on selectin ligands on oral cavity carcinoma cells.
AUTHOR: Renkonen J; Rabina J; Mattila P; Grenman R; Renkonen R
CORPORATE SOURCE: Department of Bacteriology and Immunology, Haartman Institute, Haartmaninkatu 3, FIN-0014 University of Helsinki, Helsinki, Finland.. Jutta.Renkonen@Helsinki.Fi
SOURCE: APMIS, (2001 Jul-Aug) 109 (7-8) 500-6.
Journal code: 8803400. ISSN: 0903-4641.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200110
ENTRY DATE: Entered STN: 20010913
Last Updated on STN: 20011015
Entered Medline: 20011011

AB Selectin-dependent cell binding has importance in the extravasation of blood-circulating tumor cells and in the generation of metastases. Cell surface glycoproteins decorated with sialylated, fucosylated epitopes, such as sialyl Lewis(x) (sLe(x)), are ligands for selectins. Not only terminal sLe(x) moieties but also proximal core structures contribute to the formation of binding epitopes for selectins. Core 2 beta1,6-N-acetylglucosaminyltransferases (**C2GnT**) and alpha1,3-fucosyltransferases (alpha1,3-FucT) have been suggested to be the rate-limiting enzymes in the synthesis of selectin ligands. We analyzed oral cavity epithelial carcinoma cell lines and showed their **expression** of RNA transcripts for **C2GnT** and alpha1,3-FucT, identified alpha1,3-FucT enzyme activities, and analyzed the cell surface sLe(x) **expression** levels. Neither the pattern of **expressed** enzymes nor the alpha1,3-FucT activity directly predicted the binding capacity of E-selectin. However, only the sLe(x)-**expressing** cell lines were capable of binding to E-selectin, but not to P-selectin, thus putatively promoting the selectin-mediated metastasis. These findings suggest that **C2GnT** in combination with alpha1,3-Fuc-T contribute to the selectin-mediated metastasis in oral cavity carcinomas.

L12 ANSWER 16 OF 43 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2001:294581 BIOSIS
DOCUMENT NUMBER: PREV200100294581
TITLE: Decreased levels of the gel-forming mucin MUC5AC in tears of Sjogren's Syndrome patients.
AUTHOR(S): Argueso, P. [Reprint author]; Balaram, M. [Reprint author]; Spurr-Michaud, S. [Reprint author]; Dana, R. [Reprint author]; Gipson, I. K. [Reprint author]
CORPORATE SOURCE: Schepens Eye Research Inst, Harvard Medical School, Boston, MA, USA
SOURCE: IOVS, (March 15, 2001) Vol. 42, No. 4, pp. S488. print.
Meeting Info.: Annual Meeting of the Association for Research in Vision and Ophthalmology. Fort Lauderdale, Florida, USA. April 29-May 04, 2001.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Jun 2001
Last Updated on STN: 19 Feb 2002

L12 ANSWER 17 OF 43 MEDLINE on STN
ACCESSION NUMBER: 2003471431 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14533804
TITLE: Biosynthesis and function of beta 1,6 branched mucin-type glycans.
AUTHOR: Beum P V; Cheng P W
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Nebraska Medical Center Omaha, NE 68198-4525, USA.
CONTRACT NUMBER: R01 HL48282 (NHLBI)
SOURCE: Advances in experimental medicine and biology, (2001) 491 279-312. Ref: 167
Journal code: 0121103. ISSN: 0065-2598.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200311
ENTRY DATE: Entered STN: 20031010
Last Updated on STN: 20031219
Entered Medline: 20031119

AB The contribution of carbohydrate structure to biomolecular, cellular, and organismal function is well-established, but has not yet received the attention it deserves, perhaps due to the complexity of the structures involved and to a lack of simple experimental methods for relating structure and function. In particular, beta1,6 GlcNAc branching plays a key functional role in processes ranging from inflammation and immune system function to tumor cell metastasis. For instance, synthesis of the core 2 beta1,6 branched structure in the mucin glycan chain by **C2GnT** enables the **expression** of functional structures at the termini of polylactosamine chains, such as blood group antigens and sialyl Lewis x. Also, IGnT can create multiple branches on the polylactosamine chain, which may serve as a mechanism for amplifying the functional potency of cell surface glycoproteins and glycolipids. The family of enzymes which creates beta1,6 branched structure in mucin glycans is proving to be quite complex, since multiple isoforms appear to exist for these enzymes, and some of the enzymes are adept at forming more than one type of beta1,6 branched structure, as in the case of **C2GnT**-M. Furthermore, the enzymes do not appear to be restricted to acting on mucin-type acceptor structures, but are able to act on glycolipid structures as well. Much remains to be learned regarding the specific biological niche filled by each of these enzymes and how their activities complement one another, as well as the manner in which the activities of these enzymes are regulated in the cell.

L12 ANSWER 18 OF 43 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2001:492533 SCISEARCH
THE GENUINE ARTICLE: 440RF
TITLE: Regulation of poly-N-acetyllactosamine biosynthesis in O-glycans
AUTHOR: Ujita M (Reprint); Fukuda M
CORPORATE SOURCE: Burnham Inst, Canc Res Ctr, Glycobiol Program, La Jolla, CA 92037 USA; Meijo Univ, Fac Agr, Dept Appl Biol Chem, Biol Chem Lab, Tempaku Ku, Nagoya, Aichi 4688502, Japan; Meijo Univ, Agr High Tech Res Ctr, Tempaku Ku, Nagoya, Aichi 4688502, Japan
COUNTRY OF AUTHOR: USA; Japan
SOURCE: TRENDS IN GLYCOSCIENCE AND GLYCOTECHNOLOGY, (MAR 2001) Vol. 13, No. 70, pp. 177-191.
Publisher: FCCA-FORUM CARBOHYDRATES COMING AGE, C/O GAKUSHIN PUBLISHING CO LTD 1-1-8 TARUMI-CHO, SUITA 564-0062, OSAKA, 30015, JAPAN.

ISSN: 0915-7352.
DOCUMENT TYPE: General Review; Journal
LANGUAGE: English
REFERENCE COUNT: 73

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Poly-N-acetyllactosamine is a unique carbohydrate composed of N-acetyllactosamine (LacNAc) repeats and provides the backbone structure for additional modifications such as sialyl Lewis(x). It is attached to N-glycans, O-glycans, and glycolipids and synthesized by the alternate addition of beta1,3-linked N-acetylglucosamine (GlcNAc) and beta1,3-linked galactose (Gal) by i-beta1,3-N-acetylglucosaminyltransferase (iGnT) and a member of the beta1,4-galactosyltransferase (beta 4Gal-T) gene family. Poly-N-acetyllactosamines in mucin-type O-glycans can be formed in core 2- and core 4-branched oligosaccharides, which are synthesized by core 2 beta1,6-N-acetylglucosaminyltransferase (**C2GnT**) and core 4 beta1,6-N-acetylglucosaminyltransferase (C4GnT), respectively.

beta 4Gal-TIV was found to be most efficient in the addition of a single Gal residue to core 2-branched oligosaccharides among the members of the beta 4Gal-T gene family and to synthesize poly-N-acetyllactosamine in core 2-branched O-glycans together with iGnT. On the other hand, beta 4Gal-TI was shown to be most efficient for poly-N-acetyllactosamine synthesis in N-glycans. In contrast to beta 4Gal-TI, the efficiency of beta 4Gal-TIV decreases dramatically as the accepters contain more LacNAc repeats, consistent with the fact that core 2-branched O-glycans contain shorter poly-N-acetyllactosamines than N-glycans in many cells. Poly-N-acetyllactosamines in core 4-branched O-glycans were found to be synthesized most efficiently by iGnT and beta 4Gal-TI although the synthesis in core 4 branches is less efficient than in core 2 branches because of inefficient addition of GlcNAc to core 4 branches by iGnT. Thus, poly-N-acetyllactosamine extension in core 2- and core 4-branched O-glycans is differentially controlled by iGnT and different members of the beta 4Gal-T gene family.

L12 ANSWER 19 OF 43 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN
ACCESSION NUMBER: 2001:94157 SCISEARCH
THE GENUINE ARTICLE: 395TF
TITLE: Lipopolysaccharide induces mucus cell metaplasia in mouse lung
AUTHOR: Yanagihara K; Seki M; Cheng P W (Reprint)
CORPORATE SOURCE: Univ Nebraska, Nebraska Med Ctr 984525, Dept Biochem & Mol Biol, 600 S 42nd St, Omaha, NE 68198 USA (Reprint); Univ Nebraska, Nebraska Med Ctr 984525, Dept Biochem & Mol Biol, Omaha, NE 68198 USA; Univ Nebraska, Eppley Canc Ctr, Med Ctr, Omaha, NE 68198 USA
COUNTRY OF AUTHOR: USA
SOURCE: AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY (JAN 2001) Vol. 24, No. 1, pp. 66-73.
Publisher: AMER THORACIC SOC, 1740 BROADWAY, NEW YORK, NY 10019-4374 USA.
ISSN: 1044-1549.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 39

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB A murine model of lipopolysaccharide (LPS)-induced airway inflammation and epithelial cell phenotypic change, and the time courses of these events are described. A single intratracheal instillation of Pseudomonas aeruginoso LPS in mice resulted in massive recruitment of neutrophils to the lung 2 d after treatment as assessed by differential cell counts of the inflammatory cells in bronchoalveolar lavage fluid and histologic assessment of hemotoxylin and eosin (H&E)-stained lung sections. The LPS-induced neutrophilic inflammation subsided substantially on Day 4 and essentially vanished by Day 7. Airway epithelial mucus cells were not detected by Alcian blue periodic acid-Schiff staining until Day 4 after

LPS treatment and became more abundant in number as well as in mucus content on Day 7. The **expression** of Muc5ac messenger RNA (mRNA) as well as glycoprotein was enhanced on Day 2, peaked on Day 4 and decreased on Day 7,whereas enhanced **expression** of mucin core 2 beta6 N-acetylglucosaminyltransferase (**C2GnT**)-M mRNA was not detected until Day 4 and peaked on Day 7. The **expression** of C2CnT-L mRNA in the lung, a marker for activated leukocytes as well as mucus cells, peaked on Day 2 and remained moderately high until Day 7. **C2GnT**-L mRNA **expression** in LPS-treated lung correlated with the presence of neutrophils and the appearance of mucus cells in the airway epithelium. We conclude that mucus cell metaplasia and hyperplasia can be generated in mouse lungs with a single intratracheal instillation of LPS. In addition, **C2GnT**-M may serve as a marker for mucus cells in mouse lung. This LPS-induced mucus cell metaplasia and hyperplasia model should be useful for the study of Pseudomonos-induced airway mucus hypersecretory diseases.

L12 ANSWER 20 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2000:754450 HCAPLUS
DOCUMENT NUMBER: 133:319062
TITLE: **Cloning** and characterization of **human** and mouse .beta.-1-6-N-acetylglucosaminyltransferase that forms core 2, core 4 and I branches and its functional fragments
INVENTOR(S): Fukuda, Minoru; Yeh, Jiunn-Chern
PATENT ASSIGNEE(S): The Burnham Institute, USA
SOURCE: U.S., 30 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6136580	A	20001024	US 1999-233506	19990119

PRIORITY APPLN. INFO.: US 1999-233506 19990119

AB The present invention relates to a novel, multi-functional .beta.-1.fwdarw.6-N-acetylglucosaminyltransferase with core 2, core 4 and I branching activities, designated **C2GnT**-M. In particular, the invention provides substantially pure **C2GnT**-M polypeptides and nucleic acids, antibodies specifically reactive with **C2GnT**-M, and methods involving such compns. Also provided is a method of modifying an acceptor mol. by contacting the acceptor mol. with a substantially pure **C2GnT**-M polypeptide or a functional fragment under conditions that allow addn. of core 2, core 4 or I GlcNAc linkages to the acceptor mol., and an acceptor mol. produced by the method. A cDNA and encoded amino acid sequence of **human C2GnT**-M are disclosed. **Human C2GnT**-M can be further characterized as a polypeptide of 438 amino acid residues having a predicted mol. wt. of 50,963 Da and a predicted type II membrane topol. The invention also provides functional fragments and derivs. of **C2GnT**-M that have one or more of the biol. activities of full-length **C2GnT**-M. A biol. activity of a **C2GnT**-M fragment can be, for example, one or any combination of the core 2 .beta.-1.fwdarw.6-N-acetylglucosaminyltransferase, core 4 .beta.-1.fwdarw.6-N-acetylglucosaminyltransferase or I-branching .beta.-1.fwdarw.6-N-acetylglucosaminyltransferase activities of **C2GnT**-M. The invention also provides a substantially pure nucleic acid mol. encoding **C2GnT**-M or a functional fragment or deriv. thereof, or the complement of the nucleic acid mol., wherein **C2GnT**-M is characterized as a polypeptide having core 2, core 4 and I branching .beta.-1.fwdarw.6-N-acetylglucosaminyltransferase activities. Also provided are vectors and host cells contg. nucleic acid mols. encoding

C2GnT-M or a functional fragment or deriv. thereof. The cDNA and encoded amino acid sequences of the mouse **C2GnT**-M CCL1 and IS3 fragments are provided. The invention further provides an antibody or antigen binding fragment thereof that is specifically reactive with **C2GnT**-M or with a functional fragment or deriv. hereof.
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 21 OF 43 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 2000283898 MEDLINE
DOCUMENT NUMBER: 20283898 PubMed ID: 10811884
TITLE: A multipotential beta -1,6-N-acetylglucosaminyl-transferase is encoded by bovine herpesvirus type 4.
AUTHOR: Vanderplasschen A; Markine-Goriaynoff N; Lomonte P; Suzuki M; Hiraoka N; Yeh J C; Bureau F; Willems L; Thiry E; Fukuda M; Pastoret P P
CORPORATE SOURCE: Department of Immunology-Vaccinology (B43 bis), Faculty of Veterinary Medicine, University of Liege, B-4000 Liege, Belgium.. A.vdplasschen@ulg.ac.be
CONTRACT NUMBER: R37 CA33000 (NCI)
SOURCE: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (2000 May 23) 97 (11) 5756-61. Journal code: 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; AIDS
OTHER SOURCE: GENBANK-AF231105
ENTRY MONTH: 200006
ENTRY DATE: Entered STN: 20000714
Last Updated on STN: 20000714
Entered Medline: 20000630
AB The beta-1,6-N-acetylglucosaminyltransferase (beta1,6GnT) gene family encodes enzymes playing crucial roles in glycan synthesis. Important changes in beta1,6GnT **expression** are observed during development, oncogenesis, and immunodeficiency. The most characterized beta1,6GnTs in this gene family are the **human** (h) **C2GnT** -L and h-IGnT, which have core 2 [Galbeta1-->3(GlcNAcbeta1-->6)GalNAc] and I branching [GlcNAcbeta1-->3(GlcNAcbeta1-->6)Gal] activities, respectively. Recently, h-**C2GnT**-M was shown to be unique in forming core 2, core 4 [GlcNAcbeta1-->3(GlcNAcbeta1-->6)GalNAc], and I structures. To date, the beta1,6GnT gene family has been characterized only in mammals. Here, we describe that bovine herpesvirus type 4 (BHV-4) encodes a beta1,6GnT **expressed** during viral replication and exhibiting all of the core 2, core 4, and I branching activities. Sequencing of the BHV-4 genome revealed an ORF, hereafter called BORFF3-4, encoding a protein (pBORFF3-4) exhibiting 81.1%, 50.7%, and 36.6% amino acid identity with h-**C2GnT**-M, h-**C2GnT**-L, and h-IGnT, respectively. Reverse transcriptase-PCR analysis revealed that BORFF3-4 is **expressed** during BHV-4 replication. **Expression** of BORFF3-4 in Chinese hamster ovary cells directed the **expression** of core 2 branched oligosaccharides and I antigenic structures on the cell surface. Moreover, a soluble form of pBORFF3-4 had core 4 branching activity in addition to core 2 and I branching activities. Finally, infection of a **C2GnT**-negative cell line with BHV-4 induced **expression** of core 2 branched oligosaccharides. This study extends the beta1,6GnT gene family to a viral gene and provides a model to study the biological functions of a beta1,6GnT in the context of viral infection.

L12 ANSWER 22 OF 43 MEDLINE on STN DUPLICATE 10
ACCESSION NUMBER: 2000161141 MEDLINE
DOCUMENT NUMBER: 20161141 PubMed ID: 10694812
TITLE: **Expression** of **human** Wiskott-Aldrich

syndrome protein in patients' cells leads to partial correction of a phenotypic abnormality of cell surface glycoproteins.

AUTHOR: Huang M M; Tsuboi S; Wong A; Yu X J; Oh-Eda M; Derry J M; Francke U; Fukuda M; Weinberg K I; Kohn D B

CORPORATE SOURCE: Division of Research Immunology/Bone Marrow Transplantation, Childrens Hospital Los Angeles, Los Angeles, CA 90033, USA.

CONTRACT NUMBER: DK09430-02 (NIDDK)
R01-DK49000 (NIDDK)
R37-CA33000 (NCI)

SOURCE: GENE THERAPY, (2000 Feb) 7 (4) 314-20.
Journal code: 9421525. ISSN: 0969-7128.

PUB. COUNTRY: ENGLAND: United Kingdom

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals; AIDS

ENTRY MONTH: 200003

ENTRY DATE: Entered STN: 20000327
Last Updated on STN: 20000327
Entered Medline: 20000316

AB The Wiskott-Aldrich syndrome (WAS) is an uncommon X-linked recessive disease characterized by thrombocytopenia, eczema and immunodeficiency. The biochemical defect of this disorder primarily affects cells derived from bone marrow. To understand better the molecular mechanisms underlying this disease and to evaluate the possibility of correcting the genetic defects in hematopoietic cells, a Moloney murine leukemia virus (MoMLV)- based retroviral vector carrying a functional Wiskott-Aldrich syndrome protein (WASp) cDNA driven by an SV40 promoter (LNS-WASp) was constructed. A packaging cell line containing this vector produced a stable level of WAS protein and maintained a high titer of viral output. Epstein-Barr virus (EBV)-transformed B lymphoblastoid cell lines (B-LCL) from WAS patients, which lack **expression** of the WAS protein, were transduced by the LNS-WASp retroviral vector and showed **expression** of WASp by Western blot. Analysis of the O-glycan pattern on cell surface glycoproteins from WAS patients' B-LCL showed an altered glycosylation pattern, due to increased activity of beta-1, 6-N-acetylglucosaminyltransferase (**C2GnT**). Transduction by the retroviral vector carrying the functional WASp cDNA partially restored the abnormal glycosylation pattern, and was accompanied by a decreasing **C2GnT** activity. These findings imply a functional linkage between the WAS protein and the **expression** of the glycosyltransferase involved in the O-glycosylation, and also suggest a potential gene therapy via transferring a functional WASp cDNA into hematopoietic cells for Wiskott-Aldrich syndrome. Gene Therapy (2000) 7, 314-320.

L12 ANSWER 23 OF 43 MEDLINE on STN DUPLICATE 11

ACCESSION NUMBER: 2000211217 MEDLINE

DOCUMENT NUMBER: 20211217 PubMed ID: 10745191

TITLE: Engineering of coordinated up- and down-regulation of two glycosyltransferases of the O-glycosylation pathway in Chinese hamster ovary (CHO) cells.

AUTHOR: Prati E G; Matasci M; Suter T B; Dinter A; Sburlati A R; Bailey J E

CORPORATE SOURCE: Institute of Biotechnology, ETH Zurich, CH-8093 Zurich, Switzerland.

SOURCE: BIOTECHNOLOGY AND BIOENGINEERING, (2000 May 5) 68 (3) 239-44.
Journal code: 7502021. ISSN: 0006-3592.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200005

ENTRY DATE: Entered STN: 20000613
Last Updated on STN: 20000613
Entered Medline: 20000531

AB Production of O-linked oligosaccharides that interact with selectins to mediate cell-cell adhesion occurs in one segment of a branched glycan biosynthesis network. Prior efforts to direct the branched pathway towards selectin-binding oligosaccharides by amplifying enzymes in this branch of the network have had limited success, suggesting that metabolic engineering to simultaneously inhibit the competing pathway may also be required. We report here the partial **cloning** of the CMP-sialic acid:Galbeta1,3GalNAcalpha2, 3-sialyltransferase (ST3Gal I) gene from Chinese hamster ovary (CHO) cells and the simultaneous inhibition of **expression** of CHO cell ST3Gal I gene and overexpression of the **human** UDP-GlcNAc:Galbeta1, 3GalNAc-R beta1,6-N-acetylglucosaminyltransferase (**C2GnT**) gene. A tetracycline-regulated system adjoined to tricistronic **expression** technology allowed "one-step" transient manipulation of multiple enzyme activities in the O-glycosylation pathway of a previously established CHO cell line already engineered to **express** alpha1, 3-fucosyltransferase VI (alpha1,3-Fuc-TVI). Tetracycline-regulated co-**expression** of a ST3Gal I fragment, **cloned** in the antisense orientation, and of **C2GnT** cDNA resulted in inhibition of the ST3Gal I enzymatic activity and increase in **C2GnT** activity which varied depending on the extent of tetracycline reduction in the cell culture medium. This simultaneous regulated inhibition and activation of the two key enzyme activities in the O-glycosylation pathway of mammalian cells is an important addition to the metabolic engineering field.

L12 ANSWER 24 OF 43 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2001:311327 BIOSIS
DOCUMENT NUMBER: PREV200100311327
TITLE: Regulation of cell surface sialyl-LeX **expression** level in **human** B cell precursor leukemia.
AUTHOR(S): Nakamura, Mitsuru [Reprint author]; Furukawa, Yusuke [Reprint author]; Matsuda, Michio [Reprint author]
CORPORATE SOURCE: Cell and Molecular Medicine, Jichi Medical School, Minamikawachi, Japan
SOURCE: Blood, (November 16, 2000) Vol. 96, No. 11 Part 2, pp. 43b. print.
Meeting Info.: 42nd Annual Meeting of the American Society of Hematology. San Francisco, California, USA. December 01-05, 2000. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 27 Jun 2001
Last Updated on STN: 19 Feb 2002

AB Cell surface sialyl-LeX (sLeX) is known as one of established selectin ligands and biosynthesized through the action of alpha1->3 fucosyltransferase VII (FucTVII) and alpha2->3sialyltransferase IV (ST3GalIV). Significant down regulation of sLeX antigen **expression** during pre-B cell differentiation is mediated by leukocyte type core 2 beta1->6GlcNAc-transferase (**C2GnT** or **C2GnT**/L). We have examined further role of **C2GnT**/L comparing with FucTVII, ST3GalIV, and mucin type of **C2GnT** (**C2GnT**/M) by establishing gene overexpressed sublines from pre-B lymphoid KM3 cells. While sLeX down regulation was partially blocked in the transfectants of FucTVII, ST3GalIV, and **C2GnT**/M, the block was far from sufficient. Only **C2GnT**/L could completely block the suppression of sLeX **expression**. Inability of **C2GnT** /M for substituting **C2GnT**/L was further confirmed using Tet-ON

gene **expression** system. For clinical samples, lymphoblasts from B-ALL patients exhibited high sLeX **expression** and strong message **expression** of FucTVII, ST3GalIV, and **C2GnT**/L. By contrast in B-CLL lymphoblasts, sLeX was not **expressed** and all glycosyltransferase messages were suppressed as well as **C2GnT**/L. These suggest that, before the suppression of FucTVII and ST3GalIV, the key **C2GnT**/L is first down regulated during **human** B cell differentiation resulting sufficient decrease of sLeX antigen **expression**. Furthermore, it is suggested that this role of **C2GnT** is solely played by leukocyte type **C2GnT**/L and cannot be replaced by another type of the enzyme, **C2GnT**/M.

L12 ANSWER 25 OF 43 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2000-02839 BIOTECHDS
TITLE: Glycosylation engineering in Chinese hamster ovary cells using tricistronic vectors; **expression** of core 2 N-acetylglucosaminyltransferase and alpha-1,3-fucosyltransferase-III or -IV in CHO cell culture for production of glycoprotein having a **human**-like glycosylation pattern
AUTHOR: Dinter A; Zeng S; Berger B; *Berger E G
CORPORATE SOURCE: Univ.Zurich-Inst.Physiol.
LOCATION: Institute of Physiology, University of Zurich, Winterthurerstrasse 190, CH-8057 Zurich, Switzerland. Email: egberger@physiol.unizh.ch
SOURCE: Biotechnol.Lett.; (2000) 22, 1, 25-30
CODEN: BILED3
ISSN: 0141-5492
DOCUMENT TYPE: Journal
LANGUAGE: English
AB CHO cells lack core-2 N-acetylglucosaminyltransferase (**C2GnT**) and alpha-1,3-fucosyltransferase (a3FucT), 2 key enzymes for the **expression** of O-linked sialyl-Lewis-X structures which are required for P-selectin binding. Tricistronic vectors were constructed that encoded the neomycin-resistance marker in the 3rd cistron, and mouse **C2GnT** or a3FucT-III or -IV in either the 1st or 2nd cistron, respectively, under control of the SV40 virus promoter. The separate moieties of the constructs were separated by internal ribosomal entry site (IRES) sequences. CHO cells transfected with the tricistronic vectors produced **C2GnT** and a3FucT activities in a constant ratio. P-selectin binding of **recombinant** P-selectin glycoprotein ligand-1 (PGSL-1) was demonstrated in CHO cells stably **expressing** a3FucT-IRES-**C2GnT** or a3FucT-III-IRES-**C2GnT** and cotransfected with a soluble form of PGSL-1 and a puromycin-resistance conferring plasmid. This approach appears to be well suited to engineering glycosylation pathways that require matched transfer rates of sequentially active glycosyltransferase, e.g. for production of **recombinant** glycoproteins having **human** -like glycosylation patterns. (10 ref)

L12 ANSWER 26 OF 43 MEDLINE on STN DUPLICATE 12
ACCESSION NUMBER: 1999386938 MEDLINE
DOCUMENT NUMBER: 99386938 PubMed ID: 10455130
TITLE: **Expression** of core 2 beta-1,6-N-acetylglucosaminyltransferase in a **human** pancreatic cancer cell line results in altered **expression** of MUC1 tumor-associated epitopes.
AUTHOR: Beum P V; Singh J; Burdick M; Hollingsworth M A; Cheng P W
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of Nebraska Medical Center, Omaha, Nebraska 68198, USA.
CONTRACT NUMBER: HL48242 (NHLBI)
P30 CA36727 (NCI)

RO1 CA69234 (NCI)
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1999 Aug 27) 274 (35) 24641-8.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 19991012
Last Updated on STN: 19991012
Entered Medline: 19990930

AB Many tumor-associated epitopes possess carbohydrate as a key component, and thus changes in the activity of glycosyltransferases could play a role in generating these epitopes. In this report we describe the stable transfection of a **human** pancreatic adenocarcinoma cell line, Panc1-MUC1, with the cDNA for mucin core 2 GlcNAc-transferase (**C2GnT**), which creates the core 2 beta-1,6 branch in mucin-type glycans. These cells lack endogenous **C2GnT** activity but **express** a **recombinant human** MUC1 cDNA. **C2GnT**-transfected **clones expressing** different levels of **C2GnT** were characterized using monoclonal antibodies CC49, CSLEX-1, and SM-3, which recognize tumor-associated epitopes. Increased **C2GnT expression** led to greatly diminished **expression** of the CC49 epitope, which we identified as NeuAcalpha2,6(Galbeta1,3)GalNAcalpha-Ser/Thr in the Panc1-MUC1 cells. This was accompanied by the emergence of the CSLEX-1 epitope, sialyl Lewis x (NeuAcalpha2,3Galbeta1,4(Fucalpha1,3)GlcNAc-R), an important selectin ligand. Despite this, however, the **C2GnT** transfectants could not bind to selectins. Increased **C2GnT expression** also led to masking of the SM-3 peptide epitope, which persisted after the removal of sialic acid, further suggesting greater complexity of the core 2-associated O-glycans on MUC1. The results of this study suggest that **C2GnT** could play a regulatory role in the **expression** of certain tumor-associated epitopes.

L12 ANSWER 27 OF 43 MEDLINE on STN DUPLICATE 13
ACCESSION NUMBER: 1999143102 MEDLINE
DOCUMENT NUMBER: 99143102 PubMed ID: 9988682
TITLE: Control of O-glycan branch formation. Molecular **cloning** of **human** cDNA encoding a novel beta1,6-N-acetylglucosaminyltransferase forming core 2 and core 4.
AUTHOR: Schwientek T; Nomoto M; Levery S B; Merkx G; van Kessel A G; Bennett E P; Hollingsworth M A; Clausen H
CORPORATE SOURCE: School of Dentistry, University of Copenhagen, Norre Alle 20, 2200 Copenhagen N, Denmark.
CONTRACT NUMBER: 1 RO1 CA66234 (NCI)
1RO1 CA66234 (NCI)
5 P41 RR05351 (NCRR)
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1999 Feb 19) 274 (8) 4504-12.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF038650
ENTRY MONTH: 199903
ENTRY DATE: Entered STN: 19990326
Last Updated on STN: 20000303
Entered Medline: 19990318

AB A novel **human** UDP-GlcNAc:Gal/GlcNAcbeta1-3GalNAcalpha beta1, 6GlcNAc-transferase, designated C2/4GnT, was identified by BLAST analysis

of **expressed** sequence tags. The sequence of C2/4GnT encoded a putative type II transmembrane protein with significant sequence similarity to **human C2GnT** and IGnT. **Expression** of the secreted form of C2/4GnT in insect cells showed that the gene product had UDP-N-acetyl-alpha-D-glucosamine:acceptor beta1, 6-N-acetylglucosaminyltransferase (beta1,6GlcNAc-transferase) activity. Analysis of substrate specificity revealed that the enzyme catalyzed O-glycan branch formation of the core 2 and core 4 type. NMR analyses of the product formed with core 3-para-nitrophenyl confirmed the product core 4-para-nitrophenyl. The coding region of C2/4GnT was contained in a single exon and located to chromosome 15q21.3. Northern analysis revealed a restricted **expression** pattern of C2/4GnT mainly in colon, kidney, pancreas, and small intestine. No **expression** of C2/4GnT was detected in brain, heart, liver, ovary, placenta, spleen, thymus, and peripheral blood leukocytes. The **expression** of core 2 O-glycans has been correlated with cell differentiation processes and cancer. The results confirm the predicted existence of a beta1,6GlcNAc-transferase that functions in both core 2 and core 4 O-glycan branch formation. The redundancy in beta1,6GlcNAc-transferases capable of forming core 2 O-glycans is important for understanding the mechanisms leading to specific changes in core 2 branching during cell development and malignant transformation.

L12 ANSWER 28 OF 43 MEDLINE on STN DUPLICATE 14
ACCESSION NUMBER: 1999115671 MEDLINE
DOCUMENT NUMBER: 99115671 PubMed ID: 9915862
TITLE: Molecular **cloning** and **expression** of a novel beta-1, 6-N-acetylglucosaminyltransferase that forms core 2, core 4, and I branches.
AUTHOR: Yeh J C; Ong E; Fukuda M
CORPORATE SOURCE: Glycobiology Program, Cancer Research Center, the Burnham Institute, La Jolla, California 92037, USA.
CONTRACT NUMBER: PO1 CA71932 (NCI)
R37 CA33000 (NCI)
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1999 Jan 29) 274 (5) 3215-21.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF102542
ENTRY MONTH: 199903
ENTRY DATE: Entered STN: 19990316
Last Updated on STN: 19990316
Entered Medline: 19990303

AB Mucin-type O-glycans are classified according to their core structures. Among them, cores 2 and 4 are important for having N-acetyllactosamine side chains, which can be further modified to **express** various functional oligosaccharides. Previously, we discovered by **cloning** cDNAs that the core 2 branching enzyme, termed core 2 beta-1,6-N-acetylglucosaminyltransferase-leukocyte type (**C2GnT**-L), is highly homologous to the I branching beta-1, 6-N-acetylglucosaminyltransferase (IGnT) (Bierhuizen, M. F. A., Mattei, M.-G., and Fukuda, M. (1993) Genes Dev. 7, 468-478). Using these homologous sequences as probes, we identified an **expressed** sequence tag in dbEST, which has significant homology to **C2GnT**-L and IGnT. This approach, together with 5'and 3' rapid amplification of cDNA ends, yielded a **human** cDNA that encompasses a whole coding region of an enzyme, termed **C2GnT**-mucin type (**C2GnT**-M). **C2GnT**-M has 48.2 and 33.8% identity with **C2GnT**-L and IGnT at the amino acid levels. The **expression** of **C2GnT**-M cDNA directed the **expression** of core 2 branched oligosaccharides and I antigen on the cell surface. Moreover, a soluble

chimeric **C2GnT**-M had core 4 branching activity in addition to core 2 and I branching activities. A soluble chimeric **C2GnT**-L, in contrast, almost exclusively contains core 2 branching activity. Northern blot analysis demonstrated that the **C2GnT**-M transcripts are heavily **expressed** in colon, small intestine, trachea, and stomach, where mucin is produced. In contrast, the transcripts of **C2GnT**-L were more widely detected, including the lymph node and bone marrow. These results indicate that the newly **cloned** **C2GnT**-M plays a critical role in O-glycan synthesis in mucins and might have distinctly different roles in oligosaccharide ligand formation compared with **C2GnT**-L.

L12 ANSWER 29 OF 43 MEDLINE on STN DUPLICATE 15
ACCESSION NUMBER: 1999166954 MEDLINE
DOCUMENT NUMBER: 99166954 PubMed ID: 10069424
TITLE: Core 2-containing O-glycans on CD43 are preferentially **expressed** in the memory subset of **human** CD4 T cells.
AUTHOR: Mukasa R; Homma T; Ohtsuki T; Hosono O; Souta A; Kitamura T; Fukuda M; Watanabe S; Morimoto C
CORPORATE SOURCE: Department of Clinical Immunology and AIDS Research Center, Institute of Medical Science, University of Tokyo, Japan.
CONTRACT NUMBER: AI29530 (NIAID)
AR33713 (NIAMS)
CA33000 (NCI)
SOURCE: INTERNATIONAL IMMUNOLOGY, (1999 Feb) 11 (2) 259-68.
Journal code: 8916182. ISSN: 0953-8178.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199908
ENTRY DATE: Entered STN: 19990827
Last Updated on STN: 19990827
Entered Medline: 19990817

AB **Human** CD4 T cells can be divided into two functionally distinct subsets: a CD45RO+ memory subset and a CD45RA+ naive subset. In an attempt to identify novel cell surface molecules on these cells, we have developed a mAb, anti-1D4. The antigen defined by anti-1D4 was preferentially **expressed** on the memory subset of freshly isolated peripheral CD4 T cells and 1D4+ CD4 T cells functionally corresponded to memory T cells. Retrovirus-mediated **expression** **cloning** revealed that the 1 D4 antigen is **human** CD43. Transfection of CHO-leu cells, which stably **express** **human** CD43, with core 2 beta-1,6-N-acetylglucosaminyltransferase (**C2GnT**) conferred **expression** of the 1D4 antigen and mRNA of **C2GnT** was detected by RT-PCR only in 1D4+ T cells but not in 1D4- T cells, implying that the 1 D4 antigen is composed of core 2-containing O-glycans on CD43. Reactivity with anti-1 D4 was completely abolished when cells were treated with neuraminidase, while them remained weak binding of anti-T305, a previously described mAb which also reacts with CD43 modified with core 2-containing O-glycans. Moreover, anti-1D4 markedly reacted with NIH-3T3 cells **expressing** **human** CD43 and low levels of endogenous **C2GnT**, whereas anti-T305 reacted slightly. These results indicate that the 1D4 antigen is distinct from the epitope defined by anti-T305 and anti-1D4 is a more sensitive probe to detect core 2-containing O-glycans than anti-T305. Taken together, our results indicate that core 2-containing O-glycans, whose **expression** can easily be detected with anti-1D4, are preferentially **expressed** in the CD45RO+ memory subset of CD4 T cells.

L12 ANSWER 30 OF 43 MEDLINE on STN DUPLICATE 16
ACCESSION NUMBER: 2000069459 MEDLINE

DOCUMENT NUMBER: 20069459 PubMed ID: 10601651
TITLE: Simultaneous core 2 beta1-->6N-acetylglucosaminyltransferase up-regulation and sialyl-Le(X) **expression** during activation of **human** tonsillar B lymphocytes.
AUTHOR: Nakamura M; Ishida T; Kikuchi J; Furukawa Y; Matsuda M
CORPORATE SOURCE: Division of Molecular Hemopoiesis, Center for Molecular Medicine, Jichi Medical School, Minamikawachi, Tochigi, Japan.. owlmnaka@jichi.ac.jp
SOURCE: FEBS LETTERS, (1999 Dec 10) 463 (1-2) 125-8. Journal code: 0155157. ISSN: 0014-5793.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200002
ENTRY DATE: Entered STN: 20000209
Last Updated on STN: 20000209
Entered Medline: 20000203

AB We have investigated the regulation mechanism of the surface sialyl-Le(X) (sLe(X)) **expression** level in tonsillar B cells during activation. sLe(X) antigen became strongly positive after activation, while resting B cells were weakly positive. sLe(X) structures were mainly located on O-linked oligosaccharide chains of glycoprotein. Transcripts of FucT-VII and core 2 GlcNAc transferase (**C2GnT**) were up-regulated after activation, while those of ST3GalIV and beta1-->4GalT-I were **expressed** constitutively. However, the up-regulation of **C2GnT** was more dramatic than that of FucT-VII. These results suggest that sLe(X) **expression** level is regulated by **C2GnT** during tonsillar B cell activation.

L12 ANSWER 31 OF 43 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:770783 HCAPLUS
DOCUMENT NUMBER: 132:103285
TITLE: Effects of TGF-.beta.1 on .beta.1,6N-acetylglucosaminyltransferase activity in the **human** colonic cancer cell line Caco-2
AUTHOR(S): Kumano, Koji
CORPORATE SOURCE: Second Department of Internal Medicine, Osaka Medical College, Japan
SOURCE: Osaka Ika Daigaku Zasshi (1999), 58(2), 10-20 CODEN: OIDZAU; ISSN: 0030-6118
PUBLISHER: Osaka Ika Daigaku Igakkai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB The effects of TGF-.beta.1 on .beta.1-6 N-acetylglucosaminyltransferase (**C2GnT**) activity in the **human** colonic cancer cell line, Caco-2 (adenocarcinoma), was examd. **C2GnT** activity was assayed with various concns. (0,1,2,5,10 ng / ml) of TGF-.beta.1. The activity increased in proportion to the concn. of TGF-.beta.1 up to 5 ng / ml and reached a max. at 5 ng/mL. The activity increased gradually after 24 h incubation with 5 ng/mL of TGF-.beta.1 and remained at this level until 72 h. RT-PCR showed strong **expression** of **C2GnT** mRNA after addn. of 5 ng/mL or 10 ng/mL of TGF-.beta.1. This was consistent with the obsd. increase in enzyme activity. Both TGF-.beta. type I and type II receptors were detected by immunofluorescence. TGF-.beta.1 inhibited growth of Caco-2 cells suggesting that transduction of the TGF-/.beta.1 signal functioned properly. In conclusion, TGF-.beta.1 increased **C2GnT** mRNA levels and enzyme activity. Thus **C2GnT** activity is controlled at the mRNA level.

L12 ANSWER 32 OF 43 MEDLINE on STN DUPLICATE 17
ACCESSION NUMBER: 1998434594 MEDLINE
DOCUMENT NUMBER: 98434594 PubMed ID: 9756922

TITLE: Single glycosyltransferase, core 2 beta1-->6-N-acetylglucosaminyltransferase, regulates cell surface sialyl-Lex **expression** level in **human** pre-B lymphocytic leukemia cell line KM3 treated with phorbolester.
AUTHOR: Nakamura M; Kudo T; Narimatsu H; Furukawa Y; Kikuchi J; Asakura S; Yang W; Iwase S; Hatake K; Miura Y
CORPORATE SOURCE: Division of Hemopoiesis, Jichi Medical School, Minamikawachi, Tochigi 329-04, Japan.
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1998 Oct 9) 273 (41) 26779-89.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199811
ENTRY DATE: Entered STN: 19990106
Last Updated on STN: 19990106
Entered Medline: 19981102

AB Sialyl-Lex (sLex) antigen **expression** recognized by KM93 monoclonal antibody was significantly down-regulated during differentiation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in **human** pre-B lymphocytic leukemia cell line KM3. The sLex determinants were almost exclusively **expressed** on O-linked oligosaccharide chains of an O-glycosylated 150-kDa glycoprotein (gp150). A low shear force cell adhesion assay showed that TPA treatment significantly inhibited E-selectin-mediated cell adhesion. Transcript and/or enzyme activity levels of alpha1-->3-fucosyltransferase, alpha2-->3-sialyltransferase, beta1-->4-galactosyltransferase, and elongation beta1-->3-N-acetylglucosaminyltransferase did not correlate with sLex **expression** levels. However, transcript and enzyme activity levels of core 2 GlcNAc-transferase (**C2GnT**) were significantly down-regulated during TPA treatment. Following transfection and constitutive **expression** of full-length exogenous **C2GnT** transcript, **C2GnT** enzyme activities were maintained at high levels even after TPA treatment and down-regulation of cell surface sLex antigen **expression** by TPA was completely abolished. Furthermore, in the transfected cells, the KM93 reactivity of gp150 was not reduced by TPA treatment, and the inhibition of cell adhesion by TPA was also blocked. These results suggest that sLex **expression** is critically regulated by a single glycosyltransferase, **C2GnT**, during differentiation of KM3 cells.

L12 ANSWER 33 OF 43 MEDLINE on STN DUPLICATE 18
ACCESSION NUMBER: 1998250146 MEDLINE
DOCUMENT NUMBER: 98250146 PubMed ID: 9590264
TITLE: An sLex-deficient variant of HL60 cells exhibits high levels of adhesion to vascular selectins: further evidence that HECA-452 and CSLEX1 monoclonal antibody epitopes are not essential for high avidity binding to vascular selectins.
AUTHOR: Wagers A J; Stoolman L M; Craig R; Knibbs R N; Kansas G S
CORPORATE SOURCE: Department of Microbiology-Immunology, Northwestern Medical School, Chicago, IL 60611, USA.
CONTRACT NUMBER: AI 33189 (NIAID)
HL 31963 (NHLBI)
SOURCE: JOURNAL OF IMMUNOLOGY, (1998 May 15) 160 (10) 5122-9.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199805

ENTRY DATE: Entered STN: 19980609
Last Updated on STN: 19980609
Entered Medline: 19980528

AB Selectins are carbohydrate-binding cell adhesion molecules that play a key role in the initiation of inflammatory responses. Several studies have suggested that the sialylated, fucosylated tetrasaccharide sialyl Lewis X (sLex) is an important component of leukocyte ligands for E- and P-selectin. We have identified a stable variant of the HL60 cell line, HL60var, which displays a nearly complete absence of staining with several mAb directed against sLex and/or sLex-related structures. HL60var also exhibits a concomitant increase in reactivity with mAb directed against the unsialylated Lewis X (Lex/CD15) structure. Despite this sLex deficiency, HL60var binds well to both E- and P-selectin. No significant differences in **expression** of alpha1,3-fucosyltransferases, **C2GnT** (Core2 transferase), or P-selectin glycoprotein ligand-1 between HL60var and typical sLex(high) HL60 cells were detected. Although the precise molecular basis for the sLex(-/low) phenotype of HL60var remains uncertain, flow cytometric analysis with the sialic acid-specific Limax flavus lectin revealed a sharp reduction in HL60var surface sialylation. Thus, the loss in mAb reactivity may result from a loss of sialic acid residues from the mAb carbohydrate epitope. However, binding of HL60var to E- and P-selectin remains sensitive to neuraminidase treatment. Taken together, these data indicate that high levels of surface sLex and/or related epitopes are not essential for interactions with vascular selectins, implying that as yet unidentified sialylated, fucosylated structures serve as physiologically relevant ligands for E- and P-selectin.

L12 ANSWER 34 OF 43 MEDLINE on STN DUPLICATE 19
ACCESSION NUMBER: 1999077907 MEDLINE
DOCUMENT NUMBER: 99077907 PubMed ID: 9858509
TITLE: Interleukin 12 and interleukin 4 control T cell adhesion to endothelial selectins through opposite effects on alpha1, 3-fucosyltransferase VII gene **expression**.
AUTHOR: Wagers A J; Waters C M; Stoolman L M; Kansas G S
CORPORATE SOURCE: Department of Microbiology-Immunology, Northwestern Medical School, Chicago, Illinois 60611, USA.
SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE, (1998 Dec 21) 188 (12) 2225-31.
Journal code: 2985109R. ISSN: 0022-1007.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; AIDS
ENTRY MONTH: 199901
ENTRY DATE: Entered STN: 19990209
Last Updated on STN: 19990209
Entered Medline: 19990122

AB The alpha1,3-fucosyltransferase, FucT-VII, is crucial for the formation of ligands for all three selectins, and its **expression** regulates the synthesis of these ligands. Short-term polarized T helper (Th)1, but not Th2 or naive CD4(+) T cells, can home to sites of inflammation, but the molecular basis for this difference has remained unclear. Here we show that naive CD4(+) T cells do not **express** FucT-VII and fail to bind vascular selectins. We also show that when CD4(+) T cells are activated in the presence of the Th1 polarizing cytokine interleukin (IL)-12, levels of FucT-VII mRNA and binding to E- and P-selectin are significantly augmented. In contrast, activation of CD4(+) T cells in the presence of IL-4, a Th2 polarizing cytokine, inhibited FucT-VII **expression** and binding to vascular selectins. T cell activation upregulated **expression** of the Core2 transferase, **C2GnT**, equivalently regardless of the presence or absence of polarizing cytokines. These data indicate that the selective ability of Th1 cells, as opposed to Th2 cells or naive CD4(+) T cells, to recognize vascular

selectins and home to sites of inflammation is controlled principally by the **expression** of a single gene, FucT-VII.

L12 ANSWER 35 OF 43 MEDLINE on STN DUPLICATE 20
ACCESSION NUMBER: 1998053883 MEDLINE
DOCUMENT NUMBER: 98053883 PubMed ID: 9393734
TITLE: Carcinoma-associated **expression** of core 2 beta-1,6-N-acetylglucosaminyltransferase gene in **human** colorectal cancer: role of O-glycans in tumor progression.
AUTHOR: Shimodaira K; Nakayama J; Nakamura N; Hasebe O; Katsuyama T; Fukuda M
CORPORATE SOURCE: Second Department of Internal Medicine, Shinshu University School of Medicine, Matsumoto, Japan.
CONTRACT NUMBER: CA 33000 (NCI)
CA 48737 (NCI)
SOURCE: CANCER RESEARCH, (1997 Dec 1) 57 (23) 5201-6.
Journal code: 2984705R. ISSN: 0008-5472.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199803
ENTRY DATE: Entered STN: 19980312
Last Updated on STN: 19980312
Entered Medline: 19980302

AB Recently, it was demonstrated that an increased level of NeuNAc alpha2-3Gal beta1-4(Fuc alpha1-3)GlcNAc beta-R (sialyl Le(x)) and NeuNAc alpha2-3Gal beta1-3(Fuc alpha1-4)GlcNAc beta-R (sialyl Le(a)) **expression** on the surface of colorectal cancer cells is positively correlated with progression of the disease. It has not been determined, however, which type of glycans, N- or O-glycans, is more closely associated with progression when cancer cells **express** those oligosaccharides. To address this problem, we have examined **expression** of sialyl Le(a) and sialyl Le(x), those oligosaccharides in O-glycans, and core 2 beta-1,6-N-acetylglucosaminyltransferase (**C2GnT**) transcripts in colorectal cancer specimens from 46 patients and compared those results with clinicopathological variables. **C2GnT** is a glycosyltransferase that is responsible for the core 2 branch, which is critical for biosynthesis of sialyl Le(a) and sialyl Le(x) in O-glycans. Sialyl Le(a) and sialyl Le(x) were determined by immunohistochemistry, and **C2GnT** transcripts were detected by reverse transcription-PCR. Sialyl Le(a) or sialyl Le(x) in O-glycans was assessed by combining immunohistochemistry for sialyl Le(a) or sialyl Le(x) with reverse transcription-PCR for **C2GnT**. Sialyl Le(a), detected on cancer cells in 74% of patients, was well correlated with lymph node metastasis, whereas sialyl Le(a) and sialyl Le(x) in O-glycans, which were specifically detected in cancer tissues of 50 and 61% of patients, respectively, were closely associated with lymphatic and venous invasion. In addition, **C2GnT**, which was specifically detected in cancer tissues of 63% of patients, was closely correlated with the vessel invasion, as well as depth of tumor invasion. These results strongly suggest that sialyl Le(a) and sialyl Le(x) in O-glycans and **C2GnT** , **expressed** in cancer cells, may play important roles in tumor progression through vessel or direct invasion.

L12 ANSWER 36 OF 43 MEDLINE on STN DUPLICATE 21
ACCESSION NUMBER: 97344242 MEDLINE
DOCUMENT NUMBER: 97344242 PubMed ID: 9224630
TITLE: **Expression** of stable **human** O-glycan core 2 beta-1,6-N-acetylglucosaminyltransferase in Sf9 insect cells.
AUTHOR: Toki D; Sarkar M; Yip B; Reck F; Joziasse D; Fukuda M;

Schachter H; Brockhausen I
CORPORATE SOURCE: Department of Biochemistry, University of Toronto, Toronto, Ontario, Canada M5S 1A8.
SOURCE: BIOCHEMICAL JOURNAL, (1997 Jul 1) 325 (Pt 1) 63-9.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199708
ENTRY DATE: Entered STN: 19970813
Last Updated on STN: 19970813
Entered Medline: 19970807

AB UDP-GlcNAc:Galbeta1-3GalNAc-R (GlcNAc to GalNAc) beta-1, 6-N-acetylglucosaminyltransferase (**C2GnT**) catalyses the formation of O-glycan core 2. Purification and characterization of **C2GnT** from natural sources has been hampered by the instability of this enzyme. We have been able to prepare a stable partly purified **recombinant human C2GnT** by **expression** of a truncated form of the enzyme in the baculovirus/Spodoptera frugiperda 9 (Sf9) insect cell system. **C2GnT** activity was secreted into the Sf9 culture medium (15 pmol/min per microl; approx. 0.2 mg/l) and was stable at 4 degrees C either in solution or after lyophilization. Endoglycosidase H and N-glycanase F treatment of the radiolabelled **C2GnT** indicated the presence of N-glycans at both potential N-glycosylation sites. The elimination of one or both of the two potential N-glycosylation sites or treatment of the virus-infected insect cells with tunicamycin resulted in loss of enzyme activity due in part to protein degradation.

L12 ANSWER 37 OF 43 MEDLINE on STN DUPLICATE 22
ACCESSION NUMBER: 96216406 MEDLINE
DOCUMENT NUMBER: 96216406 PubMed ID: 8621728
TITLE: Post-translational modifications of **recombinant** P-selectin glycoprotein ligand-1 required for binding to P- and E-selectin.
AUTHOR: Li F; Wilkins P P; Crawley S; Weinstein J; Cummings R D; McEver R P
CORPORATE SOURCE: W. K. Warren Medical Research Institute, Department of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, 73140, USA.
CONTRACT NUMBER: P01 HL 54804 (NHLBI)
SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1996 Feb 9) 271 (6) 3255-64.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199606
ENTRY DATE: Entered STN: 19960627
Last Updated on STN: 19980206
Entered Medline: 19960619

AB P-selectin glycoprotein ligand-1 (PSGL-1) is a mucin-like ligand for P- and E-selectin on **human** leukocytes. PSGL-1 requires sialylated, fucosylated O-linked glycans and tyrosine sulfate to bind P-selectin. Less is known about the determinants that PSGL-1 requires to bind E-selectin. To further define the modifications required for PSGL-1 to bind P- and E-selectin, we transfected Chinese hamster ovary (CHO) cells with cDNAs for PSGL-1 and specific glycosyltransferases. CHO cells synthesize only core 1 O-linked glycans (Galbeta1-3GalNAcalpha1-Se r/Thr); they lack core 2 O-linked glycans (Galbeta1-3(Galbeta1-4GlcNAcbeta1-6)GalNAcalpha1 -Ser/Thr) because they do not **express** the core 2 beta1 6-N-acetylglucosaminyltransferase (**C2GnT**). CHO cells also

lack alpha1 3 fucosyltransferase activity. PSGL-1 **expressed** on transfected CHO cells bound P- and E-selectin only when it was co-**expressed** with both **C2GnT** and an alpha1 3 fucosyltransferase (Fuc-TIII, Fuc-TIV, or Fuc-TVII). Chromatography of beta-eliminated O-linked glycans from PSGL-1 co-**expressed** with **C2GnT** confirmed synthesis of core 2 structures. Tyrosine residues on PSGL-1 **expressed** in CHO cells were shown to be sulfated. Phenylalanine replacement of three tyrosines within a consensus sequence for tyrosine sulfation abolished binding to P-selectin but not to E-selectin. These results demonstrate that PSGL-1 requires core 2 O-linked glycans that are sialylated and fucosylated to bind P- and E-selectin. PSGL-1 also requires tyrosine sulfate to bind P-selectin but not E-selectin.

L12 ANSWER 38 OF 43 MEDLINE on STN DUPLICATE 23
ACCESSION NUMBER: 95173603 MEDLINE
DOCUMENT NUMBER: 95173603 PubMed ID: 7869048
TITLE: **Human** thymic epithelial cells **express** an endogenous lectin, galectin-1, which binds to core 2 O-glycans on thymocytes and T lymphoblastoid cells.
AUTHOR: Baum L G; Pang M; Perillo N L; Wu T; Delegeane A; Uittenbogaart C H; Fukuda M; Seilhamer J J
CORPORATE SOURCE: Department of Pathology and Laboratory Medicine, UCLA School of Medicine 90024.
CONTRACT NUMBER: AI-07126 (NIAID)
CA-33000 (NCI)
CA-33895 (NCI)
+
SOURCE: JOURNAL OF EXPERIMENTAL MEDICINE, (1995 Mar 1) 181 (3) 877-87.
Journal code: 2985109R. ISSN: 0022-1007.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 19950407
Last Updated on STN: 19950407
Entered Medline: 19950324

AB Thymic epithelial cells play a crucial role in the selection of developing thymocytes. Thymocyte-epithelial cell interactions involve a number of adhesion molecules, including members of the integrin and immunoglobulin superfamilies. We found that **human** thymic epithelial cells synthesize an endogenous lectin, galectin-1, which binds to oligosaccharide ligands on the surface of thymocytes and T lymphoblastoid cells. Binding of T lymphoblastoid cells to thymic epithelial cells was inhibited by antibody to galectin-1 on the epithelial cells, and by two antibodies, T305 and 2B11, that recognize carbohydrate epitopes on the T cell surface glycoproteins CD43 and CD45, respectively. T lymphoblastoid cells and thymocytes bound **recombinant** galectin-1, as demonstrated by flow cytometric analysis, and lectin binding was completely inhibited in the presence of lactose. The degree of galectin-1 binding to thymocytes correlated with the maturation stage of the cells, as immature thymocytes bound more galectin-1 than did mature thymocytes. Preferential binding of galectin-1 to immature thymocytes may result from regulated **expression** of preferred oligosaccharide ligands on those cells, since we found that the epitope recognized by the T305 antibody, the core 2 O-glycan structure on CD43, was **expressed** on cortical, but not medullary cells. The level of **expression** of the UDP-GlcNAc:Gal beta 1,3GalNAc-R beta 1, 6GlcNAc transferase (core 2 beta 1, 6 GlcNAc transferase, or **C2GnT**), which creates the core 2 O-glycan structure, correlated with the glycosylation change between cortical and medullary cells. **Expression** of mRNA encoding the **C2GnT** was high in subcapsular and cortical thymocytes and low in

medullary thymocytes, as demonstrated by in situ hybridization. These results suggest that galectin-1 participates in thymocyte-thymic epithelial cell interactions, and that this interaction may be regulated by **expression** of relevant oligosaccharide ligands on the thymocyte cell surface.

L12 ANSWER 39 OF 43 MEDLINE on STN DUPLICATE 24
ACCESSION NUMBER: 96318025 MEDLINE
DOCUMENT NUMBER: 96318025 PubMed ID: 8748164
TITLE: Isolation and characterization of a pseudogene related to **human** core 2 beta-1,6-N-acetylglucosaminyl-transferase.
AUTHOR: Bierhuizen M F; Maemura K; Fukuda M
CORPORATE SOURCE: Glycobiology Program, La Jolla Cancer Research Foundation, California 92037, USA.
CONTRACT NUMBER: CA33000 (NCI)
CA33895 (NCI)
SOURCE: GLYCOCONJUGATE JOURNAL, (1995 Dec) 12 (6) 857-64.
Journal code: 8603310. ISSN: 0282-0080.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199611
ENTRY DATE: Entered STN: 19961219
Last Updated on STN: 19961219
Entered Medline: 19961115

AB In a previous study, we isolated genomic **clones** encoding core 2 beta-1,6-N-acetylglucosaminyltransferase (**C2GnT**) and blood group IGnT and proposed that these two genes were produced from a common ancestral gene by duplication, diversion and intron insertion. In the present study, we have isolated a pseudogene which is highly related to the gene of **C2GnT**. The sequence analysis of this pseudogene indicated that the pseudogene was produced by duplication of a common precursor gene for **C2GnT**. These results taken together strongly suggest that the ancestral gene was first duplicated and one of the duplicated genes directly evolved into the IGnT gene. The other duplicated gene was further duplicated to produce the **C2GnT** gene and the pseudogene.

L12 ANSWER 40 OF 43 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED.
on STN DUPLICATE 25
ACCESSION NUMBER: 95225818 EMBASE
DOCUMENT NUMBER: 1995225818
TITLE: Genomic organization of core 2 and I branching .beta.-1,6-N- acetylglucosaminyltransferases. Implication for evolution of the .beta.-1,6-N-acetylglucosaminyltransferase gene family.
AUTHOR: Bierhuizen M.F.A.; Maemura K.; Kudo S.; Fukuda M.
CORPORATE SOURCE: La Jolla Cancer Research Foundation, 10901 North Torrey Pines Road,San Diego, CA 92037, United States
SOURCE: Glycobiology, (1995) 5/4 (417-425).
ISSN: 0959-6658 CODEN: GLYCE3
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Two **human** .beta.-1,6-N-acetylglucosaminyltransferases forming the core 2 O- glycan branch, **C2GnT** and the I antigen IGnT, are homologous to each other in three regions of the catalytic domain (A, B, C) and their genes reside at the same locus, chromosome 9, band q21 (Bierhuizen, M.F.A., Mattei, M.-G. and Fukuda, M., Genis Dev., 7, 468-478, 1993). In order to investigate how these two enzymes are related at the

genomic level, and how this gene family evolved, we have elucidated their genomic structures. It was found that **C2GnT** is coded by two exons, of which the second exon encodes the whole translation product. In contrast, the complete coding sequence for IGnT is divided over three exons. Importantly, the highly homologous region B is encoded entirely by exon 2 in the **C2GnT** gene, while the same region is split between exons 1 and 2 in the IGnT gene. The other highly homologous regions, A and C, are also encoded by exon 2 in the **C2GnT** gene, while they are encoded by exon 1 and exon 3, respectively, in the IGnT gene. These results strongly suggest that the common ancestral gene was first duplicated and then each duplicated gene evolved into the **C2GnT** or IGnT gene by intron insertion and divergence following the duplication. The sequences upstream from the transcription initiation sites of the **C2GnT** and IGnT genes have promoter activity and contain TATA-like sequences. In addition, the promoter sequence of the **C2GnT** gene contains potential binding sites for a variety of transcription factors, including NF-IL6, GATA-3 and TCF-1, which are specifically active in T lymphocytes and during inflammation. The results are consistent with the fact that **C2GnT** is highly **expressed** in activated T lymphocytes and myeloid cells.

L12 ANSWER 41 OF 43 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1994-07116 BIOTECHDS
TITLE: New beta-1,6-N-acetylglucosaminyltransferase and acceptor; **human recombinant** enzyme production by vector plasmid pcDNAI-**C2GnT expression** in CHO-Py-leu cell culture
PATENT ASSIGNEE: La-Jolla-Cancer-Res.Found.
PATENT INFO: EP 590747 6 Apr 1994
APPLICATION INFO: EP 1993-250268 29 Sep 1993
PRIORITY INFO: US 1992-955041 1 Oct 1992
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1994-111195 [14]
AB **Human recombinant** purified beta-1,6-N-acetylglucosaminyltransferase (I) (EC-2.4.1.150) or a (I) fragment is claimed. (I) has activity of UDP-GlcNAc:Gal-beta-1-3GalNAc (GlcNAc to GalNAc) beta-1-6 N-acetylglucosaminyltransferase. (I) preferably has mol.wt. about 50,000. Also claimed are: (1) nucleic acid (II) encoding (I) or a (I) fragment (DNA sequence disclosed); (2) a vector containing (II), especially plasmid pcDNAI-**C2GnT**; (3) a host cell containing the vector; (4) a purified **human** protein or a protein fragment that is an acceptor molecule (III) which is acted upon by (I) having activity which forms core 2 oligosaccharide structures in O-glycans; (5) nucleic acid encoding (III); (6) a vector containing the nucleic acid of (5), especially vector plasmid pcDSR-alpha-leu; (7) a host cell containing the vector of (6); (8) a method for obtaining from a cell line **recombinant** (I) or **recombinant** (III) involving transfecting a cell line (preferably CHO-Py-leu) with a vector and screening the gene bank for (I) or (III) **expression**; and (9) a method for isolating (I) from a host cell. (I) is useful as a tumor marker and (III) can be used for antibody production. (34pp)

L12 ANSWER 42 OF 43 MEDLINE on STN DUPLICATE 27
ACCESSION NUMBER: 94140881 MEDLINE
DOCUMENT NUMBER: 94140881 PubMed ID: 8308016
TITLE: **Expression** of a differentiation antigen and poly-N-acetyllactosaminyl O-glycans directed by a **cloned** core 2 beta-1,6-N-acetylglucosaminyltransferase.
AUTHOR: Bierhuizen M F; Maemura K; Fukuda M
CORPORATE SOURCE: Glycobiology Program, La Jolla Cancer Research Foundation, California 92037.
CONTRACT NUMBER: CA33000 (NCI)

CA33895 (NCI)

SOURCE: JOURNAL OF BIOLOGICAL CHEMISTRY, (1994 Feb 11) 269 (6) 4473-9.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199403
ENTRY DATE: Entered STN: 19940330
Last Updated on STN: 19940330
Entered Medline: 19940317

AB Chinese hamster ovary (CHO) cells do not contain detectable amounts of core 2 beta-1,6-N-acetylglucosaminyltransferase, **C2GnT**, and thus lack various modifications in their branched O-linked oligosaccharides. In the present study, the O-linked oligosaccharides and the occurrence of a differentiation antigen were analyzed in CHO cells stably transfected with cDNA encoding **human** leukosialin alone (CHO-leu) or with cDNAs encoding both leukosialin and **C2GnT** (CHO-leu.**C2GnT**). The analysis of O-glycans, released from [3H]glucosamine-labeled cells, revealed that CHO-leu cells synthesize O-glycans with a Gal beta 1-->3GalNAc backbone, whereas CHO-leu.**C2GnT** cells synthesize in addition O-glycans with a Gal beta 1-->3(Gal beta 1-->4GlcNAc beta 1-->6)GalNAc backbone. Moreover, CHO-leu.**C2GnT** cells **express** poly-N-acetyllactosaminyl extensions from the GlcNAc beta 1-->6 branch in O-glycans, while CHO-leu cells **express** no detectable amount of poly-N-acetyllactosaminyl O-glycans. It was also demonstrated that leukosialin in CHO-leu.**C2GnT** cells is recognized by the T305 monoclonal antibody, while the same antibody did not react at all with CHO-leu cells. In addition, the transient **expression cloning** scheme using the T305 monoclonal antibody as a selectin marker and COS-1 cells, which endogenously **express C2GnT** as recipient cells, resulted in the isolation of cDNA encoding leukosialin. These results indicate that **C2GnT** determines the **expression** of poly-N-acetyllactosamines in O-glycans and together with leukosialin, an onco-differentiation antigen recognized by the T305 antibody.

L12 ANSWER 43 OF 43 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN

ACCESSION NUMBER: 95:129212 SCISEARCH
THE GENUINE ARTICLE: QF341

TITLE: DIFFERENTIAL REGULATION OF CD43 GLYCOFORMS ON CD4(+) AND CD8(+) T-LYMPHOCYTES IN GRAFT-VERSUS-HOST DISEASE

AUTHOR: ELLIES L G (Reprint); JONES A T; WILLIAMS M J; ZILTENER H J
CORPORATE SOURCE: UNIV BRITISH COLUMBIA, BIOMED RES CTR, 2222 HLTH SCI MALL, VANCOUVER, BC V6T 1Z3, CANADA (Reprint); UNIV BRITISH COLUMBIA, DEPT PATHOL & LAB MED, VANCOUVER, BC V6T 1Z3, CANADA
COUNTRY OF AUTHOR: CANADA

SOURCE: GLYCOBIOLOGY, (DEC 1994) Vol. 4, No. 6, pp. 885-893.
ISSN: 0959-6658.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 53

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Two distinct T-cell glycoforms of CD43 result from differential glycosylation of a single gene product in vivo. The 115 kDa glycoform tarries mainly tetrasaccharides and is a pan T-cell marker, whereas the 130 kDa glycoform carries mainly hexasaccharides and is associated with T-cell activation, CD43 has been shown to play a role both in enhancing and inhibiting cell adhesion; however, the function of the individual glycoforms is unknown. We have examined the distribution and regulation of

the CD43 glycoforms in a murine model of acute graft-versus-host disease (GVHD) using monoclonal antibodies (mAbs) S7 and 1B11 specific for the 115 and 130 kDa CD43 glycoforms, respectively, An increase in T-lymphocyte CD43 130 kDa **expression** occurred during GVHD from day 4 onwards and coincided with splenomegaly and upregulation of the beta 1-6GlcNAc transferase (**C2GnT**), the key enzyme responsible for the addition of complex O-glycan branching to CD43. When T-lymphocyte subsets were examined for CD43 **expression**, we found that in GVHD, both CD43 glycoforms were upregulated on CD4(+) T cells. However, in CD8(+) T cells, CD43 115 kDa was downregulated while CD43 130 kDa was dramatically upregulated, such that two distinct CD8(+)1B11(+) T-cell subsets were observed. These data demonstrate differential **expression** of the CD43 glycoforms in both resting and activated CD4(+) and CD8(+)T cells, and suggest that glycosylation differences between the CD43 glycoforms may reflect participation in the different functions of these T-cell subsets in immune disorders in vivo.

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=> e schwientek t/au
E1            3     SCHWIENTEK P/AU
E2            3     SCHWIENTEK S/AU
E3           71 --> SCHWIENTEK T/AU
E4           45     SCHWIENTEK TILO/AU
E5           32     SCHWIEP F/AU
E6            4     SCHWIEPERICH WALDEMAR/AU
E7            1     SCHWIER/AU
E8            2     SCHWIER B/AU
E9           10     SCHWIER C/AU
E10          14     SCHWIER C E/AU
E11           1     SCHWIER CHRIS/AU
E12           8     SCHWIER CHRIS E/AU

=> s e3-e4
L13         116 ("SCHWIENTEK T"/AU OR "SCHWIENTEK TILO"/AU)

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E1            7     CLAUSEN GUNNAR/AU
E2            1     CLAUSEN GURLI/AU
E3          804 --> CLAUSEN H/AU
E4            1     CLAUSEN H */AU
E5            1     CLAUSEN H A/AU
E6           97     CLAUSEN H B/AU
E7           29     CLAUSEN H D/AU
E8            4     CLAUSEN H F/AU
E9           19     CLAUSEN H H/AU
E10           9     CLAUSEN H J/AU
E11           2     CLAUSEN H J S/AU
E12           2     CLAUSEN H M/AU

=> s e3
L14         804 "CLAUSEN H"/AU

=> s l13 or l14
L15         868 L13 OR L14

=> d his

     (FILE 'HOME' ENTERED AT 14:09:33 ON 30 JAN 2004)

     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 14:11:05 ON 30 JAN 2004
L1            10 S "C2GNT3"
L2             0 S ACETYLKGLYCOSAMINE
L3         36991 S ACETYLGLUCOSAMINE
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L4            0 S "N-ACETYLGLUCVOSAMINETRANSFERASE?"
L5            4 DUP REM L1 (6 DUPLICATES REMOVED)
L6          257 S "C2GNT"
L7         5011 S "N-ACETYLGLUCOSAMINYLTRANSFERASE?"
L8         5065 S L6 OR L7
L9      6346882 S CLON? OR EXPRESS? OR RECOMBINANT
L10         233 S L6 AND L9
L11         146 S HUMAN AND L10
L12          43 DUP REM L11 (103 DUPLICATES REMOVED)
                E SCHWIENTEK T/AU
L13         116 S E3-E4
                E CLAUSEN H/AU
L14         804 S E3
L15         868 S L13 OR L14

=> s l10 and l15
L16           6 L10 AND L15

=> dup rem l16
PROCESSING COMPLETED FOR L16
L17           1 DUP REM L16 (5 DUPLICATES REMOVED)

=> d all

L17  ANSWER 1 OF 1     MEDLINE on STN                    DUPLICATE 1
AN   1999143102     MEDLINE
DN   99143102   PubMed ID: 9988682
TI   Control of O-glycan branch formation. Molecular cloning of human
     cDNA encoding a novel beta1,6-N-acetylglucosaminyltransferase forming core
     2 and core 4.
AU   Schwientek T; Nomoto M; Levery S B; Merkx G; van Kessel A G;
     Bennett E P; Hollingsworth M A; Clausen H
CS   School of Dentistry, University of Copenhagen, Norre Alle 20, 2200
     Copenhagen N, Denmark.
NC   1 RO1 CA66234 (NCI)
     1RO1 CA66234 (NCI)
     5 P41 RR05351 (NCRR)
SO   JOURNAL OF BIOLOGICAL CHEMISTRY, (1999 Feb 19) 274 (8) 4504-12.
     Journal code: 2985121R. ISSN: 0021-9258.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
OS   GENBANK-AF038650
EM   199903
ED   Entered STN: 19990326
     Last Updated on STN: 20000303
     Entered Medline: 19990318
AB   A novel human UDP-GlcNAc:Gal/GlcNAcbeta1-3GalNAcalpha beta1,
     6GlcNAc-transferase, designated C2/4GnT, was identified by BLAST analysis
     of expressed sequence tags. The sequence of C2/4GnT encoded a
     putative type II transmembrane protein with significant sequence
     similarity to human C2GnT and IGnT. Expression of the
     secreted form of C2/4GnT in insect cells showed that the gene product had
     UDP-N-acetyl-alpha-D-glucosamine:acceptor beta1, 6-N-
     acetylglucosaminyltransferase (beta1,6GlcNAc-transferase) activity.
     Analysis of substrate specificity revealed that the enzyme catalyzed
     O-glycan branch formation of the core 2 and core 4 type. NMR analyses of
     the product formed with core 3-para-nitrophenyl confirmed the product core
     4-para-nitrophenyl. The coding region of C2/4GnT was contained in a
     single exon and located to chromosome 15q21.3. Northern analysis revealed
     a restricted expression pattern of C2/4GnT mainly in colon,
     kidney, pancreas, and small intestine. No expression of C2/4GnT
     was detected in brain, heart, liver, ovary, placenta, spleen, thymus, and
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peripheral blood leukocytes. The **expression** of core 2 O-glycans has been correlated with cell differentiation processes and cancer. The results confirm the predicted existence of a beta1,6GlcNAc-transferase that functions in both core 2 and core 4 O-glycan branch formation. The redundancy in beta1,6GlcNAc-transferases capable of forming core 2 O-glycans is important for understanding the mechanisms leading to specific changes in core 2 branching during cell development and malignant transformation.

CT Check Tags: Human; Male; Support, Non-U.S. Gov't; Support, U.S. Gov't, P.H.S.
Amino Acid Sequence
Base Sequence
Chromosomes, Human, Pair 15
Cloning, Molecular
DNA, Complementary
Magnetic Resonance Spectroscopy
Molecular Sequence Data
N-Acetylglucosaminyltransferases: CH, chemistry
*N-Acetylglucosaminyltransferases: GE, genetics
*Polysaccharides: CH, chemistry
Protein Conformation
Sequence Homology, Amino Acid

CN 0 (DNA, Complementary); 0 (Polysaccharides); EC 2.4.1.- (N-Acetylglucosaminyltransferases)

=> d his

(FILE 'HOME' ENTERED AT 14:09:33 ON 30 JAN 2004)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 14:11:05 ON 30 JAN 2004

L1	10	S	"C2GNT3"
L2	0	S	ACETYLKGLYCOSAMINE
L3	36991	S	ACETYLGLUCOSAMINE
L4	0	S	"N-ACETYLGLUCVOSAMINETRANSFERASE?"
L5	4	DUP REM	L1 (6 DUPLICATES REMOVED)
L6	257	S	"C2GNT"
L7	5011	S	"N-ACETYLGLUCOSAMINYLTRANSFERASE?"
L8	5065	S	L6 OR L7
L9	6346882	S	CLON? OR EXPRESS? OR RECOMBINANT
L10	233	S	L6 AND L9
L11	146	S	HUMAN AND L10
L12	43	DUP REM	L11 (103 DUPLICATES REMOVED)
		E	SCHWIENTEK T/AU
L13	116	S	E3-E4
		E	CLAUSEN H/AU
L14	804	S	E3
L15	868	S	L13 OR L14
L16	6	S	L10 AND L15
L17	1	DUP REM	L16 (5 DUPLICATES REMOVED)

	Issue Date	Pages	Document ID	Title
1	20040129	97	US 20040018590 A1	Combinatorial DNA library for producing modified N-glycans in lower eukaryotes
2	20040115	60	US 20040009477 A1	Methods for producing libraries of expressible gene sequences
3	20040108	194	US 20040005633 A1	Methods and apparatuses for gel-free qualitative and quantitative proteome analysis, and uses therefore
4	20031211	119	US 20030228664 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
5	20031204	106	US 20030224411 A1	Genes that are up- or down-regulated during differentiation of human embryonic stem cells
6	20031127	22	US 20030219830 A1	Methods of evaluating glycomolecules for enhanced activities
7	20031002	125	US 20030186364 A1	Staphylococcus aureus genes and polypeptides
8	20030925	35	US 20030180778 A1	UDP-N-acetylglucosamine: galactose-beta1,3-N-acetylgalactosamine-alpha-R/ (GlcNAc to GalNAc) beta1,6-N-acetylglucosaminyltransferase, C2GnT3
9	20030918	142	US 20030175902 A1	Methods for producing hyaluronan in a recombinant host cell
10	20030911	121	US 20030171275 A1	Transporters and ion channels
11	20030911	125	US 20030170864 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same

	Issue Date	Pages	Document ID	Title
12	20030807	64	US 20030148460 A1	Phosphodiester alpha-GlcNAcase of the lysosomal targeting pathway
13	20030717	102	US 20030134302 A1	Libraries of expressible gene sequences
14	20030612	81	US 20030108872 A1	Genomics-assisted rapid identification of targets
15	20030529	53	US 20030099967 A1	Heparin/heparosan synthase from P. multocida and methods of making and using same
16	20030522	22	US 20030096281 A1	Methods of making glycomolecules with enhanced activities and uses thereof
17	20030508	87	US 20030087818 A1	Compositions and methods for the therapy and diagnosis of colon cancer
18	20030424	125	US 20030077657 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
19	20030424	66	US 20030077568 A1	Methods of diagnosis of colorectal cancer, compositions and methods of screening for colorectal cancer modulators
20	20030417	102	US 20030073163 A1	Libraries of expressible gene sequences
21	20030320	35	US 20030054525 A1	UDP-N-acetylglucosamine: galactose-beta1,3-N-acetylgalactosamine-alpha-R / (GlcNAc to GalNAc) beta1,6-N-acetylglucosaminyltransferase, C2GnT3

	Issue Date	Pages	Document ID	Title
22	20030320	118	US 20030054447 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
23	20030213	124	US 20030032060 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
24	20030206		US 20030027256 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
25	20021219		US 20020192678 A1	Genes expressed in senescence
26	20021219		US 20020192668 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
27	20021205		US 20020182618 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
28	20021128		US 20020177182 A1	Methods for the identification of antimicrobial compounds
29	20021107	36	US 20020164748 A1	Glycosyl sulfotransferase-3

	Issue Date	Pages	Document ID	Title
30	20021107		US 20020164646 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
31	20021031		US 20020160392 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
32	20021017	298	US 20020151681 A1	Nucleic acids, proteins and antibodies
33	20021017		US 20020150981 A1	Methods for producing highly phosphorylated lysosomal hydrolases
34	20021003	88	US 20020142386 A1	Engineering intracellular sialylation pathways
35	20020912		US 20020128224 A1	Compositions and methods for the treatment of glaucoma or ocular hypertension
36	20020725		US 20020098507 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
37	20020725		US 20020098506 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same
38	20020725		US 20020098505 A1	Secreted and transmembrane polypeptides and nucleic acids encoding the same

	Issue Date	Pages	Document ID	Title
39	20020627		US 20020081656 A1	UDP-N-acetylglucosamine: Galactose-beta1,3-N-acetylgalactosamine-alpha-R / N-acetylglucosamine-beta1,3,-N-acetylgalactosamine-alpha-R (GlcNAc to GalNAc) beta1,6-N-acetylglucosaminyltransferase, C2/4GnT
40	20020530		US 20020064816 A1	Moss genes from physcomitrella patens encoding proteins involved in the synthesis of carbohydrates
41	20020516		US 20020059659 A1	DNA shuffling to produce herbicide selective crops
42	20020516		US 20020058249 A1	DNA SHUFFLING TO PRODUCE HERBICIDE SELECTIVE CROPS
43	20020228		US 20020025550 A1	Methods for producing highly phosphorylated lysosomal hydrolases
44	20011213	27	US 20010051370 A1	Glycosyl sulfotransferase-3
45	20031230		US 6670165 B2	Methods for producing highly phosphorylated lysosomal hydrolases
46	20031104		US 6642038 B1	GlcNAc phosphotransferase of the lysosomal targeting pathway
47	20031021		US 6635461 B1	UDP-N-acetylglucosamine: galactose-.beta.1, 3-N-acetylgalactosamine-.alpha.-R/(GlcNAc to GalNAc) .beta.1,6-N-acetylglucosaminyltransferase, C2GnT3
48	20030805		US 6602693 B1	Gene encoding hyaluronan synthase
49	20030722		US 6596523 B1	.alpha.,2,8-sialyltransferase
50	20030513		US 6562958 B1	Nucleic acid and amino acid sequences relating to Acinetobacter baumannii for diagnostics and therapeutics

	Issue Date	Pages	Document ID	Title
51	20030325		US 6537785 B1	Methods of treating lysosomal storage diseases
52	20030304		US 6528289 B1	Nucleotide sequence of the Haemophilus influenzae Rd genome, fragments thereof, and uses thereof
53	20030114		US 6506581 B1	Nucleotide sequence of the Haemophilus influenzae Rd genome, fragments thereof, and uses thereof
54	20021210		US 6492150 B1	Gene encoding hyaluronan synthase
55	20020611	123	US 6403337 B1	Staphylococcus aureus genes and polypeptides
56	20020521		US 6391614 B1	Auxiliary gene and protein of methicillin resistant bacteria and antagonists thereof
57	20020402	38	US 6365365 B1	Method of determining whether an agent modulates glycosyl sulfotransferase-3
58	20020326		US 6361995 B1	Protection of pancreatic .beta.-cells during islet isolation and assessment of islet viability and candidate diabetes drugs after islet isolation
59	20020312		US 6356845 B1	Crystallization and structure determination of Staphylococcus aureus UDP-N-acetylenolpyruvylglucosamine reductase (S. aureus MurB)
60	20020101	227	US 6335170 B1	Gene expression in bladder tumors

	Issue Date	Pages	Document ID	Title
61	20010724	27	US 6265192 B1	Glycosly sulfortransferase-3
62	20010626		US 6251647 B1	Auxiliary genes and proteins of methicillin resistant bacteria and antagonists thereof
63	20010508		US 6228627 B1	Mur A-1 from Streptococcus pneumoniae
64	20010508		US 6228612 B1	Compounds
65	20010320		US 6204042 B1	GlmU
66	20001024		US 6136580 A	.beta.-1-6-N-acetylglucosaminyltransferase that forms core 2, core 4 and I branches
67	20000801		US 6096512 A	Cloned DNA encoding a UDP-GalNAc: Polypeptide, N-acetylgalactosaminyltransferase
68	20000328		US 6043071 A	GlmU

	Issue Date	Pages	Document ID	Title
69	20000118	64	US 6015701 A	N-acetylglucosaminyltransferase V proteins and coding sequences
70	19991116		US 5985643 A	Auxiliary gene and protein of methicillin resistant bacteria and antagonists thereof
71	19990608		US 5910570 A	Cloned DNA encoding a UDP-GalNAc: polypeptide N-acetylgalactosaminy-ltransferase
72	19981110		US 5834284 A	N-acetylglucosaminyl transferase gene coding therefor and process for production thereof
73	19980616		US 5766910 A	Expression of the developmental I antigen by a cloned human cDNA encoding a member of a beta-1, 6-N-acetylglucosaminyltransfrase gene family
74	19980324		US 5731420 A	Antibodies to human I-branching beta-1,6-N-acetylglucosaminyl transferase
75	19971104		US 5684134 A	Antibody specific for .beta.1.fwdarw.6 N-acetylglucosamininyltransferase
76	19970819		US 5658778 A	.beta.1-6 N-acetylglucosaminyl, transferase, its acceptor molecule, leukosialin, and a method for cloning proteins having enzymatic activity
77	19970429		US 5624832 A	.beta.1 6 N-acetylglucosaminyltransferase, its acceptor molecule, leukosialin, and a method for cloning proteins having enzymatic activity
78	19960116		US 5484590 A	Expression of the developmental I antigen by a cloned human cDNA encoding a member of a .beta.-1,6-N-acetylglucosaminyltransferase gene family

	Issue Date	Pages	Document ID	Title
79	19941101		US 5360733 A	Human .beta.1-6 n-acetylglucosaminyl transferase

	Issue Date	Pages	Document ID	Title
1	20030925	35	US 20030180778 A1	UDP-N-acetylglucosamine: galactose-beta1,3-N-acetylgalactosamine-alpha-R/ (GlcNAc to GalNAc) beta1,6-N-acetylglucosaminyltransferase, C2GnT3
2	20030501	78	US 20030082511 A1	Identification of modulatory molecules using inducible promoters
3	20030320	35	US 20030054525 A1	UDP-N-acetylglucosamine: galactose-beta1,3-N-acetylgalactosamine-alpha-R / (GlcNAc to GalNAc) beta1,6-N-acetylglucosaminyltransferase, C2GnT3
4	20021107	36	US 20020164748 A1	Glycosyl sulfotransferase-3
5	20020627	25	US 20020081656 A1	UDP-N-acetylglucosamine: Galactose-beta1,3-N-acetylgalactosamine-alpha-R / N-acetylglucosamine-beta1,3,-N-acetylgalactosamine-alpha-R (GlcNAc to GalNAc) beta1,6-N-acetylglucosaminyltransferase, C2/4GnT
6	20011213	27	US 20010051370 A1	Glycosyl sulfotransferase-3
7	20031021	34	US 6635461 B1	UDP-N-acetylglucosamine: galactose-.beta.1, 3-N-acetylgalactosamine-.alpha.-R/(GlcNAc to GalNAc) .beta.1,6-N-acetylglucosaminyltransferase, C2GnT3
8	20020402	38	US 6365365 B1	Method of determining whether an agent modulates glycosyl sulfotransferase-3
9	20010724	27	US 6265192 B1	Glycosly sulfortransferase-3

	Issue Date	Pages	Document ID	Title
10	20001024	30	US 6136580 A	.beta.-1-6-N-acetylglucosaminyltransferase that forms core 2, core 4 and I branches
11	20000926	37	US 6124267 A	O-glycan inhibitors of selectin mediated inflammation derived from PSGL-1
12	19980616	31	US 5766910 A	Expression of the developmental I antigen by a cloned human cDNA encoding a member of a beta-1, 6-N-acetylglucosaminyltransfrase gene family
13	19980324	30	US 5731420 A	Antibodies to human I-branching beta-1,6-N-acetylglucosaminyl transferase
14	19971104	26	US 5684134 A	Antibody specific for .beta.1.fwdarw.6 N-acetylglucosamininyltransferase
15	19970819	24	US 5658778 A	.beta.1-6 N-acetylglucosaminyl, transferase, its acceptor molecule, leukosialin, and a method for cloning proteins having enzymatic activity
16	19970429	26	US 5624832 A	.beta.1 6 N-acetylglucosaminyltransferase, its acceptor molecule, leukosialin, and a method for cloning proteins having enzymatic activity
17	19970408	23	US 5619726 A	Apparatus and method for performing arbitration and data transfer over multiple buses
18	19960116	31	US 5484590 A	Expression of the developmental I antigen by a cloned human cDNA encoding a member of a .beta.-1,6-N-acetylglucosaminyltransferase gene family

	Issue Date	Pages	Document ID	Title
19	19941101	27	US 5360733 A	Human .beta.1-6 n-acetylglucosaminyl transferase

	L #	Hits	Search Text
1	L2	0	"glucosaminetransferase$2"
2	L3	0	"glucosaminyltransferase$2"
3	L4	215	"UDP-N-acetylglucosamine"
4	L5	230	l1 or l4
5	L6	595126	clon$3 or express$3 or recombinant
6	L7	79	l5 same l6
7	L1	19	"c2GnT"
8	L8	6	schwientek.in.
9	L9	672	clausen.in.
10	L10	674	l8 or l9
11	L11	4	l10 and l1